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NOTES ON THE JOYOTE OF MEXICO.

By Professor Alfonso Herrera, *Member of the Mexican Society of Natural History.*

In the damp, hot regions of the fertile mountains of the great Mexican Cordillera grows a tree remarkable for its thick foliage, elegance and beauty of its golden colored flowers, and the uncommon form of its fruit. The Aztecs called it *Joyotli*, hawks-bell, on account of the use they made of the nuts as bells, but others say that it takes its name from the property of the seeds to cure the bite of the Crotalus, rattlesnake; and the wise physician, Felipe II., says: "The ancient Mexicans made use of the milky juice that the tree produces in abundance, for curing deafness and cutaneous diseases. They applied the leaves topically in toothache, and as an emollient and resolvent to tumors, and lastly, they used the fruit to heal ulcers."

At present the fruit is called huesos ò codos de fraile, bones or friar's elbow, perhaps for its resemblance to the human elbow. Among the people these seeds have a great reputation in hemorrhoids, and are applied topically after being triturated and mixed with suet.

The joyote is the *Thevetia yccotli*,[1] De C., Cerbera thebetioides H. B., nat. ord. Apocynaceæ tribe Carisseæ, an elegant tree whose numerous branches are covered with a greenish silver-gray epidermis, with gray wrinkles, longitudinal furrows and protuberances somewhat spirally arranged; its leaves are sessile, linear, acuminate, dark-green above and pubescent and of a lighter color beneath, with some prominent transverse veins; the margin is entire and revolute; size, fourteen centimeters long and seven millimeters wide. Inflorescence cymose, calyx five-parted, lobes lanceolate, acuminate and beardless, corolla salver-shaped, pubescent in the lower part of the tube and throat, the

[1] Hernandez has corrupted the word *Joyotli* of the Aztecs into *iccotli*, and De Candolle used the latter as the specific name of this plant.

tube widened above to bell-shape, the throat with five ovate appendages covered with white hairs; beneath are the stamens alternating with the lobes of the corolla; anthers sessile and lanceolate, opening with two lateral fissures. Ovaries two, united at the basis and free above, flat on the face and convex on the back, unilocular and biovulate, united on top by a fleshy ring with five incisions alternating with the lobes of the calyx. The stigma is black, head-shaped, with ten ribs at the base and a bi-lobulate conical top. The ovules are amphitropous, sub-globular, of parietal placentation, equi-distant between the base and top of the ovary. Drupe ovoid-globular, green, with a large crest about the middle, extending to near the base, but more prominent above, and with a slight furrow, and terminating in two small nipples on each side. Epicarp smooth and green; mesocarp greenish-white, very laticiferous; endocarp woody, of a dirty yellow color, and the same form as the fruit, provided with a complete woody partition in the direction of its small diameter, and with two false ones in the other direction; corresponding with the latter towards the apex is a furrow, and near the base another one, corresponding to the true partition. Seeds four, commonly two abortive, inserted near the middle of the false partitions, on the margin with a small wing; spermoderm thin and papery, endopleura distinct and reticulate. Albumen none, radicle eccentric, horizontal, conic and short; cotyledons orbicular, unequal and oily, the internal surface transversely wrinkled; near the centre in the direction of the radicle a prominent crest; flowers in July.

Mr. Berlandier found, near Tampico, a variety of this species, to which he gives the name of *glabra*, because it has smooth leaves. We have also the *Thevetia ovata*, *D. C.*, which is readily distinguished by its ovate-elliptic leaves, white-tomentose on the under surface. Somewhat westward the *Thevetia cuneifolia* is found; its flowers are called *Meriendita*. The variety *anclieuxi* is found about Tonatepec. All these species and varieties are commonly known only by the vulgar name given above, but in the State of Talisco they are called *Narciss amarillos*.

The excessive acrimony of the seeds of the joyote attracted my attention, and induced me to investigate them. The small quantity at my disposal and other circumstances have prevented a fuller investigation, but incomplete as it may be, it may well serve as a basis for further observations.

The seeds of the joyote were conveniently divided, and by pressing in a common press, yielded 40 per cent. of oil resembling almond oil; its density at 20°C. is 0·9100; at 10° it becomes turbid, and at 0°C. it acquires the consistency of common lard. Concentrated sulphuric acid imparts a yellow, changing to rose color, and afterwards into deep orange-red; it is a non-drying oil, and appears to be composed of olein and palmitin. The residual powder was percolated with ether, and the liquid evaporated left a residue of about the same quantity as the oil previously obtained. Distilled water was afterwards used to extract albuminous and extractive matters, and finally the exhausted substance was treated with 85 per cent. alcohol. The filtered liquid was evaporated expontaneously, and yielded a white substance, crystallizing in four-sided prisms. These crystals were inodorous, but excessively acrid, insoluble in water, and very little soluble in ether, bisulphide of carbon, fixed and volatile oils; but easily soluble in alcohol; not volatile, and not combining with acids or bases. When treated with dilute sulphuric acid, they decompose into glucose and a resinoid substance; the principle is, therefore, a glucoside. Its solution is not affected by nitrate of silver, the chlorides of platinum, gold or iron, iodide and iodate of potassium, tannin, potassa, ammonia, the alkaline carbonates, or by ferro- and ferrid cyanide of potassium. I propose to call it *thevetosin*, although *thevetin* would probably be a more appropriate name for this principle.

In closing this paper, I must thank our distinguished toxicologist, Mr. Hidalgo Carpio, for his interest in making the physiological experiments detailed below; also, Mr. M. G. Reinoso and C. Morales, for the flowers and fruits provided for this investigation.

Luis Hidalgo Carpio's Experiments with the Active Principle of the Thevetosa Iccotli (Codo de Fraile) Seeds.—On the 8th of June, 1871, three large pigeons received sub-cutaneous injections of a small quantity of thevetosin, dissolved in a little alcohol. After fifteen minutes, they made some convulsive motions, opening their bills from time to time as if they wanted air; afterwards they passed to a comatose state, followed by death. To another pigeon a sub-cutaneous injection was applied, with rather more than double the quantity of alcohol used in the former experiment, but without the joyote; no accident after more than half an hour.

The same bird was made to swallow a teaspoonful of the oil extracted with ether. It was attacked with cough; after half an hour vomited some green matter with some of the oil, without being relieved. Four hours after it became comatose and paralyzed in both legs, and half an hour later died without convulsions.

On the 9th, half a teaspoonful of the same oil was administered to each one of two large pigeons. They vomited it, and rapidly recovered. To the same birds, more than half a teaspoonful of the same oil was given June 10th. One vomited, and nevertheless died half an hour afterwards, having coughed some. The other neither coughed nor vomited, but remained affected, and after six hours was comatose with the legs paralyzed, and soon after died.

On the 11th, another pigeon was injected by the rectum with a small spoonful of the same oil, and the anus was closed with a bandage. Half an hour afterwards it trembled in the legs, vomited repeatedly, and when the stomach was empty, had continuous nausea; an hour and a half afterwards had convulsions in the wings, the legs motionless, but not rigid, followed by a comatose state, followed by death three hours after injection.

On the 17th, two spoonfuls of the oil of joyote extracted by pressure were injected to each of two large pigeons. They vomited, and died in an hour and a half, without showing any other symptom.

The result of these experiments is, 1st: That the oil of the joyote-seed, either extracted by ether or pressure, is poisonous to pigeons. 2d: That it produces on these birds slight convulsions of the wings, paralysis of the legs, comatose state and death Difficult respiration is also observed, and continued vomiting when the oil is swallowed or injected by the rectum.

On the 10th of June, the active principle of the joyote, dissolved in a small quantity of alcohol, was injected sub-cutaneously to two large frogs. In a little while they became sleepy, apparently, and opened their mouths as if in want of air; they had but a few convulsive movements, troubled mobility, and scarcely exhibited sensibility even on burning their feet. After an hour death occurred. The active principle of the joyote-seeds, therefore, acts upon frogs as a poison, paralyzing the voluntary as well as the respiratory muscles, producing asphyxia and death.

On the 11th of June, a rabbit was injected with an alcoholic solu-

tion of joyote-seeds. One hour after it had difficult respiration, convulsions in the ears and head; afterwards, the respiration tardy and entirely diaphragmatic, had no strength to hold its head up nor to stand on its feet; in another quarter of an hour it died in a comatose state. The convulsion proceeded from the want of muscular strength.

Another rabbit was injected with alcohol alone, in about double the quantity used before, but only showed an intoxicated state, and recovered in an hour. A similar experiment with another rabbit caused prostration; the animal could not stand on its feet, and laid on its belly, without being able to stand or to walk, even after being pricked; an hour after it began to recover.

On the 13th of June, another rabbit was sub-cutaneously injected with the active principle of the joyote. An hour after its head trembled, wanted to keep it up, but could not unless laid against something; when raised, the convulsion ceased. Five minutes after it laid down, keeping quiet for awhile, afterwards convulsions in the ears and upper jaw took place, occasionally also in the fore feet; died ten days after, grunting and with difficult and diaphragmatic respiration.

On the 22d of July, ten centigrams of the active principle of the joyote were sub-cutaneously injected to a large rabbit; died in an hour; no symptom observed. On the same day, and at the same hour, a half ounce of the oil, extracted with ether, was given to another large rabbit. Forty-eight hours afterwards it was alive, did not present any remarkable symptom, and had appetite.

A large rabbit was made to swallow seven grams of the oil of joyote July 23d. Twenty-four hours after nothing had happened to it; it had eaten, but died in twenty-four hours more of traumatism.

Two grams of the aqueous extract of joyote were applied under the skin of a large rabbit, and afterwards dissolved; death occurred in two hours; no symptoms observed.

From these experiments the following conclusions are deduced: 1st. That the active principle of the seed of joyote is a violent poison for rabbits; that the oil extracted from the same seeds, though not poisonous for those animals, there are some satisfactory explanations to prove its toxic properties. 2d. That it produces the same as on pigeons —a muscular debility, passing into a general paralysis, invading the respiratory muscles, and lastly into slow axphyxia and coma.

On the 20th of June, a small adult dog was injected on one side of

the body with five centigrams of the active principle of joyote dissolved in a small quantity of alcohol. In fifty minutes he had diaphragmatic respiration and mucous vomiting. From that time until an hour afterwards the vomiting continued with great effort and grumbling, phlegm or bile in small quantity being thrown up, the respiration continuing diaphragmatic. In ninety minutes was seized with a strong general tetanic convulsion of about half a minute's duration, followed by relaxation and general clonical convulsion lasting three minutes, and death. No stupor, narcotism, signs of delirium or paralysis took place; had no diarrhœa, no alteration of the pupil was observed.

From this it may be inferred: 1st. That the thevetosin is very venomous. 2d. That it has a violent emetic action depending upon the nervous system, like tartar. 3d. That it acts on the respiration, making it difficult by paralysis, more and more complete on the external muscles of respiration. Judging from that, the tetanic convulsions followed by the clonical that preceded death, were the effects of asphyxia caused immediately from perlesia.

These experiments, made on different kinds of animals, prove that the emetic action of the different products of the joyote seeds is constant in all animals that can vomit; that the muscular system of respiration becomes paralytic, and that this paralysis can extend in some cases to the other muscles. Thevetosin, acting so powerfully upon the animal economy, may probably become of importance, and be employed more advantageously than curare.

NOTES ON THE PREPARATION AND TOXIC EFFECTS OF GELSEMIA.

By Theo. G. Wormley, M.D.

In a former number of this journal (Jan., 1870) we showed that Gelsemium serpervirens contained an organic acid, *gelseminic acid*,[1] and a nitrogenized basic principle or alkaloid, *gelsemia*, to the latter of which the plant owes its activity.

The method there pointed out for the preparation of these two principles was to concentrate the fluid extract of the root (containing the soluble matter of 480 grains of the root to the fluidounce) to

[1] According to the recent researches of Dr. C. A. Robbins, made in the laboratory of Sonnenschein, in Berlin, this principle is identical with *æsculin*.

about one-eighth its volume, dilute the concentrated extract with several times its volume of water, and, after subsidence of the resinous matter and filtration, to again concentrate the liquid to the original volume of the extract employed. The liquid was then acidulated with hydrochloric acid and the gelseminic acid extracted with ether, after which the liquid was rendered alkaline and the gelsemia extracted by chloroform.

More recent investigations have shown that, by the former part of this process, a large proportion of both the principles in question are separated with the resinous matter, and thus escape recovery.

After trying various methods for the more complete recovery of these principles from the fluid extract, we find the following to give the best results: A given volume of the fluid extract, acidulated with acetic acid, is slowly added, with constant stirring, to about eight volumes of water; after the separated resinous matter has completely deposited, the liquid is filtered and the filtrate concentrated on a water-bath to something less than the volume of fluid extract employed. The gelseminic acid is then extracted from the concentrated fluid by ether, after which the liquid is treated with slight excess of carbonate of sodium, and the gelsemia extracted with ether or chloroform. For the extraction of the first of these principles it is not essential that the liquid should be acidulated, but in the presence of a free acid the results are more satisfactory.

A series of examinations of a number of samples of the fluid extract of gelsemium, prepared by several of the more prominent manufacturers, showed that, as found in commerce, it quite uniformly contains about 0·2 per cent. of gelsemia, and 0·4 per cent. of the non-nitrogenized principle. The only marked exception to this was found in the case of a fluid extract furnished a physician as a sample, which contained just double the ordinary proportion of the alkaloid and acid. Two samples of fluid extract, prepared by the same firm, as obtained from the shops, contained the ordinary quantity of the alkaloid and acid.

Within the last several years quite a number of cases of poisoning, by the preparation of gelsemium, have been reported. We have thus far collected reports of thirteen cases of this kind as having occurred in this country. Of this number nine proved fatal.

In the fatal cases the dose of the fluid extract varied, in the case of

adults, from about one fluid drachm to one tablespoonful; and the time of death from two hours and a half to seven hours and a half.

In one instance, 15 grains of the resinoid "gelsemin" proved fatal to a woman in one hour after the dose had been taken.

Fifty minims of a tincture prepared from four ounces of the root to one pint of dilute alcohol, proved fatal to a child, aged three years, in two hours. And in another instance a much less quantity of the tincture, taken in two doses, caused the death of a child in one hour after the second dose had been taken.

In one of the non-fatal cases a tablespoonful of the fluid extract had been taken; but it was soon followed by vomiting, induced by an emetic.

In another instance, in which from one to two teaspoonfuls of the ordinary fluid extract produced most profound symptoms, recovery took place under the administration of three grains or more of morphia, employed hypodermically, in half-grain doses, repeated overy few minutes. From the report of this case, by Dr. Geo. S. Courtwright ("Cincinnati Lancet and Observer," Nov., 1876), it would appear that the morphia was the means of saving the life of the individual.

In the cases thus far reported there seems to be only one or, at most, two instances in which the poison was administered with criminal intent.

Columbus, Ohio, February 27th, 1877.

SALICYLATE OF ATROPIA AND ITS APPLICATION TO PHARMACY.[1]

By C. R. C. Tichborne, Ph.D., F.C.S., &c.

It is well known how difficult it is sometimes, in the most simple preparations, to get one that shall meet all the requirements of the physician, the surgeon, and the pharmaceutist. Thus, whilst a particular preparation may just hit off the views of the prescriber, it may be devoid of keeping properties, a point of considerable importance in these days, when the dispenser has neither the inclination or time to make his own preparations.

A striking instance of this clashing of requirements is to be observed in the solutions of atropia contained in the "British Pharmacopœia."

[1] Paper read before the Pharmaceutical Society of Ireland, February 8, 1877, and communicated by the author.

There are two of them, both of the same strength (viz.: 4 grains to the fluidounce), as they are intended for the same use in ophthalmic surgery.

The first (liquor atropiæ) is a solution of the alkaloid itself in a mixture of spirit and water, the proportions being one-eighth rectified spirit to seven-eighths water. Such a solution keeps fairly, but produces great irritation of the eye, particularly in those cases where operations have been performed, or where there is a chronic sensibility attending many abnormal conditions of the organ. The liquor atropiæ is, therefore, inadmissable in such cases. We presume it is from this point of view that the rather absurd plan of introducing a second solution, corresponding in almost all its therapeutical effects to the first, is introduced. This solution is the liquor atropiæ sulphatis, which, although free from the objection of its being irritating, has another one equally objectionable, for it will not keep. A fungus is developed at the expense of the alkaloid; the solution becomes thick, muddy and loses its strength. Perhaps the best remedy hitherto proposed was the one suggested in Dr. W. Smith's book, but from some cause or the other not generally adopted. The suggestion was that the solution should be made with camphor water.

In conducting some experiments, some years ago, on salicylic acid, it struck me, at the time, that the salicylates of some of the alkaloids might be used with a considerable amount of advantage, as they ought to possess inherent antiseptic properties. I, therefore, considered that salicylate of atropia would be an appropriate salt to operate upon, if such a salt could be formed. If atropia is mixed with salicylic acid, in equivalent proportions, a soft soluble mass is obtained that cannot well be crystallized. Although accidentally a semi-crystalline mass was once obtained by acting upon a sample of foreign atropia, these results could never be repeated; it is probable that the crystallization was due to the presence of some impurity. My experiments were afterwards made with a beautiful crystalline specimen made by Messrs. Hopkins & Williams, of London. Atropia and crystallized salicylic acid were mixed in equivalent proportions, assuming that the last-named acid was a monobasic acid, and the alkaloid acted as a monad. If atropia be warmed with an excess of salicylic acid and a moderate quantity of water, and then allowed to cool, the excess of acid crystallizes only, and on evaporating down the mother liquor 2·7 parts of atropia were found to give 4·04 of colloidal salicylate of atropia, which is ·05 over the weight required by theory.

If the atropia and salicylic acid be mixed, in equivalent proportions, and water added, both the substances dissolve after some time, although the ingredients are both comparatively insoluble in cold water. The proportions used were, atropia 289, salicylic acid 138 grains. If the aqueous solution be evaporated, a colloidal mass will be obtained difficult to powder. An attempt was made to crystallize the salt from ether, but without success. Alcohol was also tried with a like result. This difficulty, as regards crystallization, is characteristic of the atropia salts. The actual solubility of this salt was determined at a temperature of 15° C. In two determinations it gave, as regards saturated solutions:

1st determination,	4·76 per cent. salt.
2d "	4·69 "

Therefore, if we call this 4·7 per cent., and as $\frac{95·3}{4·7} = 20·2$, we may say that practically salicylate of atropia is soluble in 20 parts of cold water. Therefore it is evident that it is easy to prepare a solution of salicylate of atropia which shall represent the solutions of atropia of the "Pharmacopœia" by dissolving atropia and crystallized salicylic acid in the following proportions:

Atropia,	2·7 grains
Salicylic acid (crystallized),	1·3 "
Water,	1 ounce

Mix, and allow it to stand until it is dissolved.

With care, however, the salicylate of atropia may be obtained in the solid form, and then resembles the sulphate in appearance. In the proportions given above the acid is slightly in excess of that required by theory. It is found desirable to have a slightly acidulated solution, or, under any circumstances, not an alkaline one, because a salicylate does not act as an antiseptic in the presence of an excess of alkaloid, or what may be called an alkaline solution. A solution made in the proportions given above will keep for an indefinite time. I have placed on the table a sample of the solution of salicylate of atropia, four grains to the ounce. It was made on August 4, 1876, so that it is now over six months old, and there is not the slightest sign of any fungoid growth. As regards the possibility of its producing irritating effects, I placed some of this solution in the hands of friends who are in the foremost ranks as regards ophthalmic surgery. They have, with their

usual courtesy, tried this preparation. I append some of their opinions, so far as they bear on the keeping and non-irritating properties of this solution.

Dr. A. Jacob writes: "When I received your salicylate I placed it side by side with a sulphate solution in my case of collyria, and I have used them comparatively in a great number of cases. I find now that, though exposed to the air, it contains none of the fungoid growth common in atropine solutions, and its mydriatic properties, as satisfactory as the first day. It is, unlike the Pharmacopœial liq. atropiæ, quite unirritating. It does not produce the conjunctival irritation which prevents in some cases the unlimited use of the ordinary solutions."

The rest of the paper was taken up with reports from Dr. Fitzgerald, Surgeon-Oculist in Ordinary to the Queen in Ireland, and Dr. Swanzy, both as regards its keeping properties and non-irritating power.

Owing to the supposed antiseptic properties of the acids, the benzoate and borate of atropia had been made, but solutions of these salts proved a failure, a fungus appearing after one or two months.

NOTES ON SOME MEDICINAL AND OTHER USEFUL PLANTS.

By Prof. X. Landerer, Athens.

Cyclamen Europæum and Hederæfolium.—The tuberous roots of these plants, the *κυκλαμις* of the ancient Greeks, has been used in olden times and is still employed by the peasants as a remedy in scrophulous affections; the root, radix cyclaminis s. arthanitæ of older pharmacy, is popularly called *swine-bread*, being dug up and devoured by these animals. The herdsmen of Greece eat it for its purgative properties. In ancient times the flowers were used for garlands, and the plant, having been consecrated to Bacchus, the wine goblets were surrounded with the leaves of the *kissos*, ivy, and the flowers of kyklamis.

Chrysanthemum segetum, which is principally found in burying-grounds, is used in Greece in the same manner as the Persian insect powder, and is quite efficaceous for the purpose, particularly when used in fumigation. The plant was known in olden times under the

names of *krysanthemon*, or gold flower; *chalkanthemon*, or copper flower, and *heliochrysos*, or sungold—the names having reference to the color of the flower-heads. At present it has various popular names, which are the equivalent of the English oxeye daisy.

Alhagi manna is the saccharine exudation of Hedysarum Alhagi s. Alhagi maurorum. Camel drivers state that camels like the plant and eat the tops of it, and that the excretion of this manna is thereby increased. The substance has been described by the older writers under various names, such as *'αερομελι*, mel aëre, man arabum, mana hebraica, honey of John the Baptist, etc.

Tamarisk manna has some resemblance to the preceding. It is eaten with bread, and is produced by the puncture of an insect, Coccus manniparus, upon the branches of Tamarix mannifera, which grows in the peninsula of Sinai. It is principally collected by the monks of a monastery, who distribute it to the pilgrim visitors.

Use of Fennel.—The fruit of fennel, called *marathron*, has been always highly esteemed in Oriental countries as a remedy for sore eyes, and to the present time is employed by the people for that purpose in the form of infusions and cataplasms applied to the eyes.

Caraway, which appears to be the *kyminon* of old, and the *karos* of later writers, has also enjoyed great reputation. Among the preparations formerly employed was particularly a mixture with salt and a kind of sauce, to prepare which special servants were kept by the rich. At present caraway is used like other common aromatic plants.

Equisetum.—The plants of this genus were formerly called *hippuris*, meaning horsetail, from *ἵππος*, a horse, and *'ουρα*, tail, and has, therefore, the same signification as the present botanical name which is derived from *equus*, horse, and *seta*, bristle. As in olden times, several plants of this genus still enjoy a popular reputation in dropsy and various nephritic diseases. I have known them, more particularly Eq. hyemale and palustre, to be employed by old physicians in connection with the herb of

Parietaria officinalis, the *helxine* of the old authors, and which was also called *parthenion* or virgin's plant, *perdinion* or partridge herb, because partridges were supposed to like it, and sometimes *urceolaria*, from its use for the cleaning of glass vessels. The two plants combined were used, with supposed good results, in dropsical, phthisical,

scrophulous, cancroid and other chiefly incurable and contagious diseases. About 30 years ago the custom prevailed in the Orient, but is now dying out, that after the death from the first named diseases, the clothes and other effects of the deceased were burned, the house and walls scrubbed and white-washed or painted, because the diseases were considered contagious.

Agave Americana is now quite common in Greece and other Oriental countries; the genus derives its name from the Greek *'αγαυος*, signifying wonderful, splendid. At the Olympia Exposition, held a few years ago at Athens, elegant fabrics for ladies' wear were exhibited and much admired, which had been made from the textile fibres of this plant. This industry is carried on in the Ionian Islands, mainly in Zante and Cephalonia, and gives employment to many women and children. An extract prepared from the leaves is medicinally employed to some extent.

Spartium junceum is another plant the fibres of which furnish the material for excellent fabrics. By the women of Maina and Sparta they are principally made into carpets, which, when properly kept, are almost indestructible, and will last for 20 or 30 years. These textiles, fine specimens of which were exhibited at the late Olympia Exposition, are called *spartopana*. The same material was formerly used for preparing many articles of domestic use. The plant has always been esteemed for bees; it has been employed medicinally for its diuretic and drastic properties.

Corinthian Raisins.—The day preceding the festival of the holy Elias, 19 July, old style (August 2), is one full of excitement; for on that day thousands of laborers, mainly women, children and old men, are engaged to commence the harvesting of the grapes on the following day, which, in the form of the so-called *currants*, represent for Greece an annual income of from 40 to 50 million drachms. There is scarcely another enterprise as profitable, and for that reason all the suitable soil on the Corinthian bay is converted into vineyards. With merry songs the laborers march to the vineyards to prepare on the first day their tents and huts from boards and shrubbery. In the meantime the drying-floors (*alonia*) have been prepared by leveling a suitable piece of ground with a mixture of clay and cowdung, not omitting sufficient drainage for the rapid removal of water in case of rain. Many

coopers are at the same time engaged in making barrels for packing the raisins, and the merchants who have purchased the product in advance so far as possible, look anxiously for the arrival of the English steamers, which to the number of thirty or forty or even fifty usually congregate at the different ports. British gold coins are then in circulation, and the joy is general, from the carrier of burdens to the wholesale commissioner and merchant, in the expectation of the high wages and profit derived from this monopoly of a portion of Greece and the Ionian Islands.

After ten or twelve sunny days the fruit is dry enough to be separated from the stalks and farther purified by winnowing, when it is carried to the warehouses for packing and storage until it is shipped; the weighing and packing being done under the supervision of government officials. Each shipmaster is anxious to secure the first cargo, and the departure of the vessel carrying the so-called *primaroles*, is the occasion of festivities, adorning of the ship with wreaths and the firing of cannon. But throughout the general joy, the anxiety of many is plainly visible, lest a heavy rain might be the cause of disappointing the hopes and expectations of thousands of families.

Grecian Grapes.—More than fifty varieties of grapevines are cultivated in Greece, yielding as many different wines. A number of years ago attempts were made to transplant the valuable grapevines of Hungary and Germany to Greece; but though they flourished in the sunny oriental clime, the acidulous grape from the Rhine became rich in sugar, and produced a wine resembling those obtained from indigenous grapes, and the latter acquired a harsh and acid taste when cultivated in Southern Germany or on the Rhine. The proverb, "Suum cuique," is probably also applicable in this case.

NOTE ON XANTHIUM SPINOSUM.

By the Editor.

During the past year the above plant has attracted some attention in Europe in consequence of its asserted prophylactic action against hydrophobia, and experiments were made with it in France with the view of testing its properties and virtues in that dreadful disease. That they have had a negative result has already been stated in our last volume (page 571); but since some inquiries for the new drug have been made

in this country, and since the plant has been naturalized in various parts of the United States, we present, with the present number, a plate which has been copied from the "Swiss Pharmaceutical Weekly," and represents a branch of the plant in natural size.

The genus Xanthium belongs to the natural order of Compositæ, tribe Senecionideæ, sub-tribe Melampodineæ, division Ambrosieæ of DeCandolle. It is characterized by having the staminate and pistillate flowers in different heads upon the same plant; the involucre of the former, which are placed at the top of the branches, is sub-globose, consists of free scales placed in one row, and contains many florets with clavate, shortly five-lobed corollas. The pistillate heads have an oblong or ovoid involucre, which is closed, coriaceous, armed with hooked prickles and one or two strong beaks at the apex, and contains two florets with filiform corollas, no stamens and flat akenes destitute of pappus. The plants of this genus are all coarse-looking, annual weeds, with stout branching stems and alternate leaves, and are known by the trivial names of clot-weed and cocklebur.

The species under consideration is originally indigenous to the southern part of Europe, from Southern Russia west to France, but has gradually spread farther north into Hungary, Bohemia, Silesia, Switzerland and Alsace, but in most places it occurs but sparingly, the farmers aiming at its extirpation on account of its rapidly spreading into the fields to the great injury of the crops. It has likewise been to some extent introduced into most civilized countries, and in the United States is found spontaneous and completely naturalized in the eastern section from the New England States south to Georgia, growing in waste places and neglected fields, near the sea board and along rivers. Dr. W. Darlington, in his "Flora Cestrica," 1853, strongly advocates its total extirpation, and states that "some years since the authorities of one of our cities, where it was becoming a great nuisance in the streets, enacted an ordinance against it, denouncing it by the name of *Canada thistle!*"

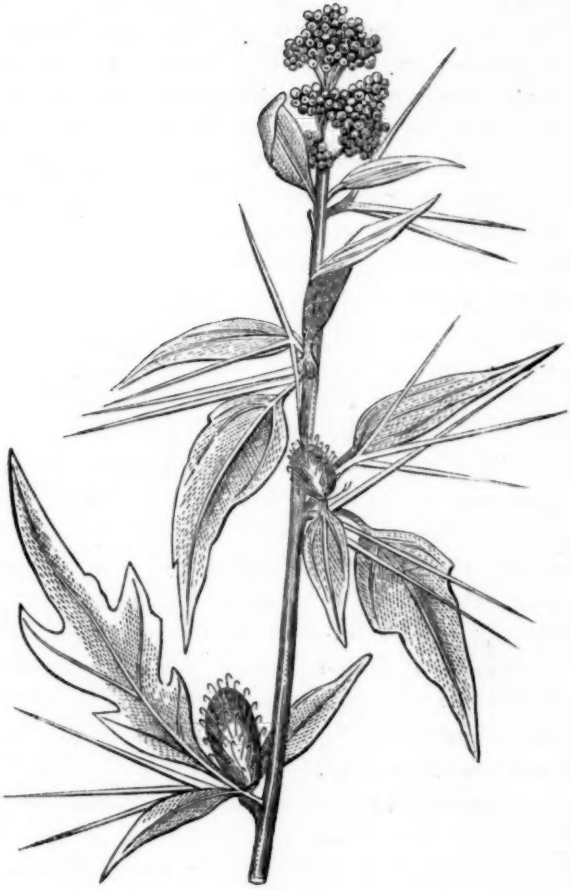
It produces a terete striate and pubescent stem, from one to three feet in height, and has lanceolate or ovate-lanceolate, shortly petiolate leaves, which are white downy beneath, the lower being three-lobed, the upper more or less cut-toothed or entire. At the base of each leaf are stipules, consisting of sharp, three-forked, yellowish spines, frequently attaining an inch in length; the fertile burs are crowned

with one short and inconspicuous beak. The leaves dried and powdered are of a green color, have a strong somewhat narcotic odor and a bitter taste. According to C. C. Keller, they contain a volatile oil and bitter extractive. The results of the analysis of Yvon and Nocard will be found in our last volume, page 538. The leaves were recommended to be taken uninterruptedly for six weeks in doses of 0·60 grams (10 grains) three times daily, for adults, and for children under 12 years, in half the quantity stated, cataplasms of the leaves being applied at the same time. For dogs, the doses required are said to be considerably larger. The drug is stated to be successfully employed in southern Russia, in cases of threatened hydrophobia.

A report on the action of Xanthium spinosum, by Trasbot and Nocard, was read December 14, 1876, before the *Société centrale de médecine vétérinaire*. The authors had inoculated eleven dogs with saliva taken from a living rabid dog; six were treated with the leaves of xanthium, but nine of the whole number died in from fourteen to eighty days, two with all the symptoms of hydrophobia, the remainder with nervous symptoms, not decided enough to attribute them to this disease. The authors therefore conclude that the spinous cocklebur has not the property of curing hydrophobia, nor does it prevent its development, after either natural or experimental inoculation.

These experiments, it must be admitted, do not support the statements of Dr. Grzymala, of Podolia, who a year ago recommended it, based upon observations extending over twenty years, and numerous cases of men and animals bitten by rabid dogs or wolves. According to L. Ladé, it was noticed as early as 1861 by Oesterle, in his "Arznei mittellehre," as a remedy highly recommended by a Russian physician in hydrophobia. Other experiments are being made in the veterinary school of Zurich and very likely in other places, so that the true value of the proposed remedy will soon be established. Thus far it appears as if it was to share the fate of the *xanthion* of the ancient writers, the root, leaves and fruit of which were formerly held to possess diuretic, diaphoretic and alterative properties.

The species alluded to is *Xanthium strumarium* Lin., which is now found in most parts of the civilized world, though perhaps originally indigenous to Asia, Europe and the northern part of Africa. It resembles the species above described, from which it is distinguished by the absence of spines at the base of the leaves, by the broadly



XANTHIUM SPINOSUM, *Lin.*

ovate, somewhat trilobed leaves, and by the two-beaked burs. It is common in this country, particularly west. Closely allied to, and perhaps a mere variety of it, is the *X. echinatum*, *Murray*, which is mainly distinguished by its larger burs, and is found here near the seashore, in many places of Mexico, South America and the Old World. *X. indicum*, *Roxb.*, which is found from China and India west to Egypt, is likewise very similar to it. Evidently distinct is *X. catharticum*, H. B. K., of Ecuador, with ternate spines and pinnatifid leaves, which are hispid above and tomentose beneath. The herb is used in its native country as a cathartic under the name of *cazamaroucha*.

SOLUTION OF CITRATE OF MAGNESIUM.

To the Editor of "American Journal of Pharmacy."

DEAR SIR—On perusing the March number of the journal, I noticed two articles on solution of citrate of magnesium; one in particular (by John W. Watts) attracted my attention. He states that the "officinal formula is liable to a series of objections in regard to preparation and preservation, and then proceeds to give a formula requiring 450 grains of citric acid and 120 grains of calcined magnesia, and substituting boiling water for cold water.

I think Mr. J. W. W. must have mistaken an old edition of the "Dispensatory" for the "Pharmacopœia" of 1870, for the formula in the latter directs 400 grains of citric acid, and magnesium carbonate instead of calcined. Regarding his reference to an almost rotten preparation, I would like to ask, Where is the "pharmacist" of any standing who will dispense a decomposed solution?

During my experience I have adopted the following formula as yielding a satisfactory preparation, and one that will remain unchanged for a reasonable length of time (two weeks): Ten troyounces of citric acid is dissolved in a quart of hot water, five troyounces of carb. magnesium is added, and the whole stirred until dissolved; it is then filtered into a graduated five-pint bottle, and sufficient cold water added to make three pints. This is enough for twelve bottles. Put two fluidounces of syrup of citric acid in each bottle, add four fluidounces of the solution, nearly fill with cold water, cork and label the bottles, and place on a shelf. When I have a call for it, I remove the cork, add forty grs. bicarbonate potassium, replace the cork and secure it with

twine. By telling the person to "shake the bottle well" before opening, I dispense unexceptionable citrate. The above is virtually the "officinal formula," or, I should say, a multiple of it. The above quantity (12 bottles) lasts us about six days, and I am confident that the last is as good as the first. I am afraid friend "W." has not tested the efficiency of the present "Pharmacopœia" formula, and I think it would be advisable to do so, before condemning it.

Respectfully yours, W. WESLEY.

West Philadelphia, March, 1877.

PILLS AND PILL MASSES.

BY HANS M. WILDER.

Mr. Moore, in his twenty-two-and-one quarter-page article on sugar-coated pills (this journal, p. 105) states several objections to plain pills, the chief of which seems to be that when to be made freshly too much time will be consumed. I venture to offer an expedient which I have used for several years, whereby the time is reduced to a minimum. Those pills which are very often called for I keep in mass, ready for rolling out. Take, for instance, compound cathartic pills: I mix the powders and make into a stiff mass with q. s. glycerin, and keep in a jar, marked: take four grains for each pill (making allowance for the glycerin). In this way any kind of pills often called for may be kept. The rolling out does not take one minute, and people know that the pills are fresh, *having seen them made*. I must say that since I started this feature (and the one with freshly made tartrate of sodium) I had more calls for either than ever before: our customers appreciate such things. The idea of keeping pill masses was easily got by noticing the convenience of blue mass; objections, there are none: if a stiff mass be made, it will not soften so soon, notwithstanding the hygroscopic property of glycerin. Spoiling is out of question; make only sufficient to last a week or so.

UNGUENTUM HYDRARGYRI NITRATIS.

BY S. WOLFF.

(*Read at the Pharmaceutical Meeting, March* 20.)

Of all the preparations in the "Pharmacopœia," there is probably none that causes more disappointment and dissatisfaction to the con-

scientious pharmacist than the subject of this paper. There is none, perhaps, that has been experimented with as much, and none that there has been less ascertained about, or which has yielded less satisfactory results, notwithstanding the many theories that have been advanced for it.

Many of our older pharmacists have their own pet formulas for this ointment, and every one of them assures you that it makes a first-rate preparation, possessing all the necessary qualities for which this truly meritorious article is celebrated, but it was heretofore never our lot to see any of them that could lay claim to being an elegant or scientific preparation. Long ago the olive oil and lard of European "Pharmacopœias" have been discarded as unsuitable for the purpose, and the neatsfoot oil adopted instead, which yielded an article of more unctuous consistency, but the color thereof illy corresponded with its popular name. The lard itself of the present edition has much improved the appearance of this ointment, but it makes the name of "ointment" a mere sham, as it requires considerable physical exertion to reduce it sufficiently to admit it being mixed with ointments or lard; the color of it, besides, gradually changes from a bright yellow into a greenish dark hue. Butter, too, has been recommended as furnishing the article "par excellence," but alas, it answers no better than all the previously mentioned oils and fats. The author of this paper, in a moment of despair, was induced to try the now popular cosmolin to that end, only to find, that if exposed to the air, it rapidly assumed a dark-brown color, holding the subnitrate of mercury with a great deal of nitric acid in suspension, entering no combination with it, while by the subsequent liberation of nitrous acid it is puffed up not unlike a sponge cake. Dr. Fessenden, of North Carolina, seemed to have comprehended the fallacy of our formulas, when he proposed the employment of non-drying oils, and we had almost cause to chide the revisors of the "Pharmacopœia" for not adopting his method at once, had we not reason to believe that they had succeeded with it as little as ourselves, and ascertained that, although theoretically feasible, the preparation therefrom was most anything else than citrine ointment.

The chemical reaction taking place in the formation of this ointment is confessedly not precisely known, consequently little understood, and various writers have sought to place the greatest importance on the regulation of heat and mode of admixture with a view of obtaining a

favorable result, but how far they have succeeded I will leave to the decision of any of our pharmaceutical brethren, who have closely adhered to their instructions. The probable liberation of oleic, stearic and palmitic acids has been correctly pointed out, but what in such a case became of the glycerin has not been made evident.

The object of obtaining a more definite idea of what changes had taken place, led the writer of this to dissolve a number of specimens of the "U. S. P." preparation, partly his own make, as also some obtained from other reputable establishments, in petroleum benzin and ether. He was surprised to find what small precipitate they afforded, being only from two to three grains in sixty of the ointment, whereas, by weighing the fatty vehicle and the resulting preparation, the mercurial salts in the preparation, after liberal deduction for water present, should not have been less than ten grains in each drachm, so that a solution of mercuric oxide forms evidently the principal part of the ointment, and the oxide can actually be separated from it by precipitation with an alkali.

Why the oleate of mercury itself should therefore not be preferable to the ointment as a therapeutical agent we will leave to the medical faculty to investigate, as certainly a more uniform, reliable and scientific preparation can be obtained by the direct process.

That possibly the presence of stearic or palmitic acids were the cause of the changes noted above, and which make the present form of the ointment so objectionable, naturally suggested itself to us, and our next step was to procure oils which were nearer the pure olein. Lard oil, filtered at a low temperature, used for that purpose, showed a slight improvement in consistency, but the color of it made it, if anything, more objectionable than all the rest previously employed. Oil of sweet almonds fared no better, and it then occurred to us that the fault of reducing the mercurial salts was not as well with any of the fatty acids as with the glycerin, which in the solutions of benzin and ether could not be detected, although positively insoluble therein, so that it must have underwent a change, and there seems reasonable cause to suppose that it was oxidized at the expense of the mercurial salts, leaving part of them suspended in the ointment as a mixture of sub-nitrate, mercurous oxide and globulous metallic mercury, to all of which the ointment owes its dirty-green color, with black streaks therein.

After the above, the only chance of success rested, perhaps, in the employment of purified oleic acid (for the preparation see "A. J. Ph.," January number, 1877, page 4), although the experience of high chemical authorities as to its rapid change into crystalline elaïdic acid on contact with nitrous acid, seemed to speak much against a favorable result. Actual experience seems in this case to have contradicted all theories, for not only does it yield a beautiful pale-yellow ointment (specimen submitted), which undergoes no change in color nor consistency, but its composition, as regards its mercurial constituents, is closely analogous to the preparation of the "U. S. Pharmacopœia." A solution thereof in petroleum benzin, ether or alcohol shows a beautiful yellow precipitate of equal amount of unchanged mercuric sub-nitrate and the same quantity of the oleate as the officinal article, while the nitrous acid of the decomposed mercuric deutonitrate seems just to create sufficient elaïdic acid to make its consistency that of simple cerate.

The theory that elaïdic acid has the power to change admixed oleic acid indefinitely into the former seems also not confirmed, for although we have kept specimens for months, the consistency has not changed. The odor of it is not near as objectionable as the product of the "U. S. P.," and as they are both mainly oleates, there can be no possible objection to its therapeutical employment.

In conclusion, I would state that the proportions of mercury and nitric acid employed were strictly those of the "Pharmacopœia," only the equal quantity of purified oleic acid being substituted for the lard. No particular precautions are necessary in regard to heat, no further than that the oleic acid should be heated to the full extent of a water-bath without pressure, before adding the mercurial solution, and should be kept at that point until all reaction and effervescence has ceased, whereupon it is to be stirred until it becomes cold and congealed.

Philadelphia, Pa., March, 1877.

HINTS ON THE USE OF BOOKS BY STUDENTS AND ASSISTANTS IN PHARMACY.

By J. B. Moore.

It is presumed that the library of every intelligent pharmacist should contain, at least, the following books, viz.: U. S. Pharmacopœia, U. S. Dispensatory, Fowne's or Attfield's Chemistry, Morfit's Chemical

Manipulations, Gray's or other standard work on Botany, Webster's or other Unabridged Dictionary, Dunglison's Medical Dictionary, with perhaps, one of the standard works on Therapeutics and Materia Medica and on Toxicology.

If the pharmacist be an ambitious, progressive and studious man, who is desirous of extending his knowledge beyond the usual curriculum of pharmaceutical studies, he may add to his library other valuable pharmaceutical and medical books, such as his taste may dictate and his purse enable him to procure.

These books are generally expensive works, and should be handled, by whoever uses them, with the greatest care, or they will soon become soiled and torn to pieces. I have thought it advisable, therefore, to offer a few hints to the students and assistants in pharmacy, as to the manner in which these books should be handled and used to prevent their becoming soiled or torn.

Nothing is so provoking to a preceptor as to see his student or assistant damage or soil his valuable books by rough or careless handling. Be careful in laying a book down, not to place it too near the edge of the counter or shelf, or in any position where it is likely to be knocked off or to fall to the floor. If the U. S. Dispensatory, the dictionary or other large book falls it may strike on one corner, which is liable to shatter it to such an extent as to produce a loosening of the back, and in a short time leaf by leaf will fall out and it will soon become either an entire wreck or so badly damaged as to be of little use for reading or as a book of reference.

Again, some young men, when reading a book and required to wait upon a customer, never look how or where they lay it, and often place it on its face, with its pages open, and perhaps where oil or other substance has accidentally fallen, and thus deface and soil the leaves, in addition to the injury that is done to the back by the strain caused by the improper position in which the book is placed. Now there is no excuse for this careless habit, and such vandalism should be rebuked, on every occasion, in the severest manner.

Every young man should feel glad to think that he has the inestimable advantage of access to useful and valuable text books for reading and reference. A proper appreciation of such advantages, if not his own sense of justice and duty to his preceptor, should prompt him to the greatest care in the handling and use of such works. What

would the student think if these books were within his sight and he was not allowed access to them, as should by rights be the case if he does not know how to use and properly take care of them.

There is nothing that so utterly disgusts me, or lowers a young man so much in my estimation, as to see him, by carelessness or with ruthless hand, soil or mutilate any of my books.

Books, when you have done with them, should be *at once carefully* replaced where they belong, in the library or other place.

I want every young man who reads this article to bear in mind the advice here given, and try to cultivate a habit of carefulness in the use of books, as well as in everything else within the province of his business. The observance of such a habit will, I can assure him, tend to elevate him in the confidence and respect of his employer, and will redound to his own personal advantage very greatly.

Philadelphia, March, 1877.

SELECTIONS FROM THE DANISH JOURNALS.

By Hans M. Wilder.

It might probably interest the readers of the "American Journal of Pharmacy" to learn the requirements at the examinations of graduates in Denmark. It must be premised that the preparations (and analysis) with the several written reports have to be made in three consecutive days of twelve hours each, during which time none is allowed the use of books, nor is conversation or questions permitted; all the time a strict surveillance being kept (in fact, the graduates are shut up). The seven graduates from last examinations had, respectively, to make:

Pharmaceutical Preparation.—1. Acetate of zinc from 30 grams oxide of zinc. 2. Kermes mineral from 10 grams sulphuret of antimony. 3. White precipitate from 20 grams corrosive sublimate. 4. Subnitrate of bismuth from 20 grams bismuth. 5. Protosulphate of iron from 60 grams iron. 6. Acetic acid from 20 grams acetate of sodium. 7. Acetic ether from 200 grams acetate of sodium.

Qualitative Analysis.—1. Tartrate of lime, cane sugar and oxide of antimony. 2. Tannin, gallic acid, tartrate of potash and traces of carbonate of lime. 3. Nitrate of baryta, nitrate of lead and subnitrate of bismuth. 4. Sulphate of quinia, alcohol and chloride of copper. 5. Soap and starch. 6. Sulphate of manganese, alum, sulphate of copper

and traces of sulphate of iron. 7. Arsenious acid, oxide of antimony, carbonate of lead and carbonate of lime.

Chemical test Preparation.—1. Nitric acid from 500 grams nitrate of sodium. 2. Sulphide of ammonium from 200 grams aqua ammoniæ. 3. Ether from 700 grams alcohol. 4. Ammonia from 500 grams chloride of ammonium. 5. Nitrate of silver from 30 grams silver. 6. Chloride of copper from 30 grams copper. 7. Nitrate of barium from 150 grams native sulphate of barium.

This is the practical part; the theoretical examination is oral, and occupies two additional days.—*Nij Pharm. Tid.*, 1877, p. 33.

Laws of Denmark.—The law of Dec. 1, 1779, which forbids advertisements of patent medicines, etc., has been enforced, and also another law of Jan. 10, 1791, which forbids to advertise *rupture bandages* and similar articles (*sic!!* W.)—*Arch. for Phar.*, 1877, p. 33.

Statistics of Sweden.—The sale of arsenic from all Swedish pharmacies amounts to 10,142 lbs. for 1875. With 4,341,559 inhabitants, Sweden has 558 physicians and 218 pharmacies—one physician to about 7,800, and one apothecary to about 20,000.—*Ibid.*, 1876, p. 498.

Aqua Toffana.—This well-known poisonous water (from the sixteenth century) is said to have been a solution of arsenic in aqua cymbalariæ.—Gœppert. *Ibid.*, 1876, p. 489, from *Ph. Zeit.*, 1876, p. 83.

Arsenias Auricus.—In France has for some time been used a remedy under the name of arseniate of gold (arseniate d'or). Thibault (Lille) has examined it, and found that it is only a mechanical mixture of arsenicic acid and Au_2O_3 in variable proportions, wherefore he warns against its use.—*Ibid.*, 1876, p. 490, from *Bull. Soc. Méd., Lille.*

Tablettes Pectorales.—(Trochisci glycyrrh. c. ammon. muriat.) The first formula had 1 part chloride of ammonium to 8–9 parts licorice, but the troches were very hygroscopic. Hager recommends the following as better: Ammon. chlorid., 10; extr. glycyrrhiz. pulv., 80; sacchar. alb., 30; tragacanth., 2; glycerin., 5; aqua, q. s. to form a mass, which is rolled to a thickness of 1–1½ mm. and cut in rhombes of 10–12 mm. They can be silvered if required—*Ibid.*, 1876, p. 493, from *Ph. C.*, 1876, No. 45.

Squill.—A. Janssen recommends not to slice the bulbs, but to keep them whole in the cellar. The tincture and vinegar prepared from the

fresh bulb are much more active than when prepared from the dried slices. Powdered squill not being very reliable, Mr. J. recommends to mix the tincture with a certain proportion of sugar, and evaporate at very low heat to dryness. The constituents of squill are: 8 tannin, 14 sugar, 30 mucus, 10 red coloring principle, 2 yellow, volatile principle, 5 salts, 1 scillitin and a trace of iodine.—*Ibid.*, 1876, p. 485, from *Ph. Zeits.*, 1876, No. 85.

Sydenham's Laudanum, Wine of Opium, etc.—Bellecret recommends to replace 100 parts of the wine by glycerin, which prevents, in a great measure, formation of deposit, and withal makes the preparation keep better.—*Ibid.*, 1877, p. 31 from *Rép. d. Ph.*, 1877, p. 5.

Silico-tungstic acid has been recommended by R. Godeffroy as the most sensitive reagent for alkaloids. For instance, a solution of muriate of quinia (1 : 25,000) yielded a precipitate with one drop of an aqueous solution of the above acid (likewise, muriate of cinchonia [1 : 200,000] and muriate of atropia [1 : 15,000.]). The precipitates are very little soluble in concentrated muriatic acid, and the alkaloids can be separated by solution of caustic potassa. The silico-tungstic acid is best prepared by boiling pertungstate of sodium with freshly precipitated silicic acid; precipitate with solution of mercurous nitrate, wash the precipitate, decompose with muriatic acid, and filter. Concentrate the filtrate by evaporation and let crystallize. The crystals fuse at 36° C., and are very soluble in water and in alcohol.—*Nij Pharm. Tid.*, 1877, p. 5, from *Ph. C.*, 1876, No. 51.

Icteric Urine.—Dr. Constantine Paul recommends, as a test, Violet de Paris (methylanilin violet) 5 parts in 100 parts water or alcohol; 1–5 drops poured on 10 cc. healthy urine produces a circle of a pure blue color; icteric urine colors the circle intensely carmine red. This test is reliable, since no other substance produces this change of color, and it is more sensitive than either iodine or nitric acid. —*Arch. for Pharm.*, 1877, p. 32, from *Union Ph.*, Sept., 1876.

Nutrition of Infants.—Dr. Altherr has examined into the relative nutritive power of different kinds of infants' food. He found the average daily increase in the weights of babies by using mother's milk 7·2 grams; nurse's milk, 4 grams; mother's milk at first and afterwards cow's milk, 3·8 grams; cow's milk alone, 2 grams; condensed milk, 1 gram; Nestlé's Infants' Food, 0·5 gram. The number of babies examined

was 480, but many of them were weighed every day for the first fourteen days.—*Ibid.*, 1876, p. 483, from *Zür. Gesundheitspflege*, 1875.

Gold.—Jul. Thomsen (well-known for his thermo-chemical researches) has examined into the behavior of gold and its salts, and found that there exist three allotropic states of it: 1. Gold reduced from a solution of the chloride by sulphurous acid forms a lumpy mass. 2. Reduced from the bromide it forms a very fine dark powder, which keeps its powdery form even after drying. 3. If reduced from protochloride, bromide or iodide, it forms a very fine powder, with yellow color and metallic lustre. Mr. Th. has prepared and reports at great length on Au_2Cl_4, $AuCl_3$, AuCl, $AuBr_3+AuBr$, $AuBr_3$, $AuBr_4H+5H_2O$, AuBr, Au_2O_3.—*Ibid.*, 1877, p. 1, from *Tidsk. Phys. and Ch.*

Hardened (toughened) Glass.—There exists a factory in Pittsburgh, Pa. (Ditheridge & Co., Fort Pitt Glass Works), which makes that kind of glass after a secret process of its own. La Bastie's process consists in a peculiar way of hardening. The above-named American firm obtained the above results by a peculiar composition of the glass mass. The editor thinks it probable that, considering the great hardness and peculiar transparency and freedom from color, borax seems to play a rôle, and is probably the real secret.—*Ibid.*, 1876, p. 476.

Antichlor.—Hitherto only hyposulphite of sodium has been used as antichlor; but, notwithstanding its great absorption power for chlorine, it has one drawback—sulphur is precipitated, which is soon oxidized to sulphuric acid, and "rottens" the paper or tissues. Although sulphite of sodium is not decomposed in this way, its absorption power for chlorine is very weak, and therefore it could not replace the hyposulphite. R. Wagner recommends nitrite of sodium, which does not in any way attack the bleached articles. The relative absorption powers of these three salts are as follows: 100 pts. hyposulphite take hold of 114·4 pts. chlorine; 100 pts. sulphite only of 28·1 pts. chlorine; 100 pts. nitrite as much as 103 pts. chlorine.—*Ibid.*, 1876, p. 477.

Dry Rot.—The best preservative against dry rot is the following of Mr. Schwartze, who made millions by it, and by whose recent death the secret was revealed: 1 part oil of cassia, 1 part woodtar and 1 part common train oil; apply three coats on the reverse sides and on the ends of planks, floors, etc. In all probability oil of cassia played the chief rôle as preservative.—*Ibid.*, 482.

Ice Machines.—Carré uses water ammonia, or ether, all of which have some inconveniences which prevent them from being used as much as they deserve. Windhausen uses compressed air, but the machine is somewhat difficult to manage. Pictet (Geneve) uses anhydric sulphurous acid, which is very easy of application; it exerts at —10° C. a little over one atmosphere and at +35° C. not more than four atmospheres' pressure. Sulphurous acid does not corrode the metal, nor does it dissolve the lubricating grease, which, by the way, is not necessary in every place, since the sulphurous acid acts itself as a lubricator. These latter machines make ice at an expense of 10—12 frcs. per 1,000 kilos.—*Ibid.*, 1877, p. 19.

GLEANINGS FROM THE FOREIGN JOURNALS.

BY THE EDITOR.

Pilocarpina and its Salts.—A. W. Gerrard has succeeded in purifying pilocarpina by dissolving the nitrate in boiling alcohol, from which it separates on cooling in tufts of white shining crystals; by three crystallizations it can be obtained in an almost perfect state of purity. The alcohol holds in solution a small portion of the salt. By dissolving the crystals in water, treating the solution with potassa, shaking with chloroform, and evaporating this solvent, the purified alkaloid is obtained. By dissolving the alkaloid in water, neutralizing with acid, and evaporating spontaneously, the following salts were obtained in a crystalline state, the nitrate and phosphate being more stable, and showed the following behavior to solvents:

	Water.	Alcohol.	Ether.	Chloroform.	Benzol.	Carbon bisulphide.
Nitrate	soluble.	sparingly in cold	insoluble.	insoluble.	insoluble.	insoluble.
Phosphate	soluble	sparingly in cold.	insoluble.	insoluble.	insoluble.	insoluble.
Acetate	soluble.	soluble.	soluble.	soluble.	soluble.	insoluble
Hydrochlorate	soluble.	soluble.	insoluble.	soluble.	insoluble.	insoluble.
Hydrobromate	soluble.	soluble.	insoluble.	soluble.	?	insoluble.

—*Phar. Jour. and Trans.*, Sept. 23.

Aconite Alkaloids.—C. R. A. Wright read a paper on this subject before the British Pharmaceutical Conference, in which he detailed his successful experiments for obtaining crystallized *aconitia* essentially by Duquesnel's process, and gives his analytical results. An amorphous base, perhaps *napellina*, was likewise obtained; but it is uncertain yet whether it pre-exists in the fresh root or is formed in drying or during the extraction process.

The method that ought to be adopted for the preparation of a pharmaceutical product of constant composition and properties is: 1st, percolation by alcoholic tartaric acid, and evaporation to a small bulk at as low a temperature as possible; 2d, crystallization from ether of the base separated by sodium or potassium carbonate from the aqueous solutions of the extract (after separation of resin, &c.); in this way, an inert, bitter base, if present, would be separated; and, 3d, further purification by conversion into a crystalline salt (hydrobromate). In this way, small quantities of another base which obstinately adheres to aconitia when crystallized from ether, are separated. The base obtained in this way is a simple body, expressed by the formula $C_{32}H_{43}NO_{12}$; in a state of great purity, and possessing high physiological activity.—*Ibid.*

Non-existence of Aricina.—Pelletier and Cariol obtained from a cinchona bark an alkaloid which they called *aricina* (from the Peruvian port Arica); the same alkaloid was obtained by Boerkoehn, who named it *cusconina*, from Cusco, the port of exportation of the bark. Manzini isolated afterwards from the pale penquina an alkaloid, *cinchovatina* (from Cinch. ovata), which Bouchardat and Winckler proved to be identical with aricina. O. Hesse has recently re-examined these barks, and arrived at the conclusion that the aricina and cinchovatina, when perfectly pure, are identical with *cinchonidia*. The same alkaloid is also that recently obtained by De Vrij from a cinchona bark from Jamaica, and by him supposed to be new.—*Zeitschr. Oesterr. Apoth. Ver.*, 1876, No. 34, from *Ann. d. Chem.*, clxxxi, 58.

Cinchona Culture in Java.—The cinchona bark harvest in Java was completed at the end of September, and yielded fully 45,000 kilos, of which 11,534 kilos were ready for shipment to Europe. At the auction sale in Amsterdam of the cinchona bark harvest of 1875, which took place June 1, 1876, the amount realized was 111,314.16 florins, while the total expenses of the culture during that year were 49,857.46 fls. Dr. C. Hasskarl, in his quarterly report, states that the decree of the Dutch government to send him to South America for the purpose of transplanting the cinchonas to Java, is dated June 30, 1852, so that the twenty-fifth anniversary of that culture is near at hand.—*Phar. Handelsbl.*, Jan. 17.

The Conversion of ricinoleic into stearic acid has been effected

by A. Claus and Hassenkamp. Pure ricinoleic acid is made by fractional precipitation of castor oil soap with calcium chloride, the first two-sixths being impure, the next three-sixths fractions pure ricinoleate of calcium. The acid had the composition $C_{13}H_{34}O_3$, and yielded with nascent hydrogen iodide (generated by adding phosphorus and iodine in the presence of a little water, and heating in a water-bath) iodstearidenic acid, $C_{18}H_{33}IO_2$. On treating the latter with nascent hydrogen, by boiling with zinc filings and hydrochloric acid, stearic acid, $C_{18}H_{36}O_2$ was obtained, and its identity proven by the form of the crystals, its solubility, fusing point, elementary composition, and the properties of its ethylic ether.—*Ber. Chem. Ges.*, 1876, 1916.

Emodin in Frangula Bark.—Old frangula bark was exhausted with dilute soda solution, and the liquid precipitated by hydrochloric acid; the precipitate was again boiled with soda and precipitated by HCl, then washed, dried and repeatedly crystallized from boiling absolute alcohol. A small quantity of a glucoside was removed by boiling with dilute sulphuric acid and crystallizing from alcohol or glacial acetic acid. C. Liebermann and M. Waldstein obtained it from the latter liquid in the form of orange-colored silky needles, containing acetic acid and water, which are expelled at 140° C., the crystals becoming opaque.

Ultimate analysis proving the composition of the crystals to be $C_{15}H_{10}O_5$, their identity with emodin from rhubarb was further proven by the solubilities, form of crystals and color of alkaline solutions; also by the following behavior: baryta and lime water yield red precipitates, which are somewhat soluble in boiling water with a red color; alum solution dissolves slightly with a yellow color, ammonia yielding red precipitates; evaporation with nitric acid yields yellow nitro-compounds, soluble in water with a red color; the behavior towards glacial acetic acid was that stated above.

The frangulinic acid of Faust differs in some respects from emodin; it is not impossible that it may be contained in the recent bark and gradually converted into emodin by oxidation.—*Ber. Deutsch Chem. Ges.*, 1876, p. 1775–1778.

The Strength of Tincture of Nux Vomica.—L. Siebold examined ten samples of this tincture, "British Pharmacopœia," and obtained extracts, varying for 1000 cc. of tincture between 2·7 and 10·1

grams. The amount of the tinctures necessary to impart a decidedly bitter taste to 10·000 parts of water varied between 4 and 14 parts. This difference in the strength is mainly attributed, by the author, to the use of nux vomica in powder of different degrees of fineness; for by prolonging the maceration from two to six days, the amount of extract was not materially increased. The author recommends that, in preparing the tincture, pharmacists should use the very finely powdered seeds only; 10 cc. of such a tincture should yield not less than ·09 grams of dry extract; one fluid drachm of it should impart a distinctly bitter taste to two gallons of water; and the addition of ten to twenty volumes of water to one volume of the tincture ought to produce a marked opalescence.—*Phar. Jour. and Trans.*, Sept. 30.

Tincture of nux vomica, "British Pharmacopœia," is much weaker than that of "United States Pharmacopœia," being made of two ounces to one imperial pint.

A simple separatory funnel has been constructed by C. Bulk; it consists of a glass globe *q* having two tubulures and a delivery tube *r*. The latter is closed by the conical end of a glass rod, which at *s* is fastened into a cork and can be raised and lowered by means of a glass thread fused spirally upon the rod, and by turning the handle *t*. The apparatus has been frequently employed by the author and works quite satisfactorily.—*Ber. Chem. Ges.*, 1875, p. 1898.

Santonate of sodium is prepared, by Lepage, by dissolving 10 grams of santonin in 100 grams of diluted alcohol, kept hot by means of a water bath, adding 80 grams of lime, previously slaked and suspended in a little water, and stirring frequently until the rose color produced has disappeared and calcium santonate been formed; then pour in a solution of 90 grams of sodium carbonate in 180 grams of water, agitate briskly, set aside to deposit, and filter. Concentrate the filtrate until it weighs 200 or 220 grams; after twelve hours powder the mass, suspend it in 800 grams of 90 per cent. alcohol, agitate frequently and after some hours decant from the excess of sodium carbonate,

which is to be washed with 200 grams of fresh alcohol. The solution is concentrated to 400 grams and set aside to crystallize; from 150 to 160 grams of small prismatic needles will be obtained, and about 20 to 25 grams more from the mother liquor.

The white salt contains 51 per cent. of santonic acid, dissolves in 3 parts of water and 4 of alcohol, the solutions having an alkaline reaction and a bitter taste.

Syrup of santonate of sodium is made by dissolving 5 grams of the powdered salt in 900 grams of warm simple syrup and add 100 grams of syrup of orange flowers; a tablespoonful or 20 grams of the syrup contain 0·05 sodium santonate.—*Phar. Jour. and Trans.*, Oct. 14, from *Jour. de Phar.*

Pill Coating.—The secret of successfully coating pills, according to Mr. Thos. Haffenden, is to varnish (with tolu and ether), first rendering them partially water-proof; then it is simply a question of manipulation to get a pearl-like covering with mucilage and French chalk; or albumen, freshly prepared in the way recommended for albumenized paper for photography, may be substituted for mucilage. —*Phar. Jour. and Trans.*, Sept. 23.

Preparation of Phenylsulphate of Potassium.—E. Baumann has obtained this salt from human urine, of which it is a normal constituent. It is readily prepared, synthetically, by boiling, for some time, powdered pyro-sulphate of potassium with a concentrated aqueous solution of phenol potassium, adding some alcohol and filtering while hot; on cooling, shining scales of the salt are obtained, which, after washing with alcohol, are nearly pure. The formation of the salt is explained by the equation: $C_6H_5KO+K_2S_2O_7=C_6H_5KSO_4+K_2SO_4$.

Cresylsulphate of potassium, which is a normal constituent of the urine of the horse, may be obtained by a similar reaction of cresol potassium; and *resorcin* behaves to pyro-sulphate of potassium like cresol and phenol. The resorcin compound is very readily soluble, and has not been obtained in crystals.—*Ber. Deutsch. Chem. Ges.*, 1876, p. 1715.

Precipitated Sulphur.—L. Siebold states that if hydrochloric acid be added to the solution of sulphur, in lime and water, until a slight alkaline reaction remains, the precipitated sulphur will be much superior to that obtained by using sufficient hydrochloric acid to decompose

both the pentasulphide and hyposulphite of calcium. The sulphur obtained under the last-named circumstance is coarser, heavier and darker in color, and does not exhibit the same perfect globular form under the microscope. Pure hydrochloric acid should be used to avoid the greyish tint imparted by iron sulphide, which has such a strong surface attraction for the sulphur that it cannot be removed by washing the latter with dilute hydrochloric acid.—*Phar. Jour. and Trans.*, Sept. 30.

Solution of Chlorinated Soda.—If chlorinated lime is decomposed by a solution of carbonate of sodium, the precipitate remains suspended and a clear liquid is, with difficulty, obtained by decantation. By the use of bicarbonate of sodium a crystalline precipitate of carbonate of calcium is formed, which readily subsides; a slight excess of the bicarbonate is rather advantageous.—*Apoth. Zeitung*, 1876, No. 51, from *Indust. Bl.*

Lac Ferri.—Under this name a preparation is sold, containing ferric phosphate in suspension. It is made by precipitating very dilute solutions of ferric chloride and sodium phosphate, washing carefully and removing the last traces of free acid by a little sodium carbonate. The amount of phosphate is then ascertained by drying a portion, and the moist precipitate is mixed with water until the mixture contains 1 to 1·2 per cent. of ferric phosphate.—*Phar. Zeitung*, No. 7.

Elixir of Monobromated Camphor.—Dambier recommends to dissolve 40 grams of sugar in 60 grams of 56 per cent. alcohol by the aid of heat; filter if necessary, and add, while hot, 0·50 gram of monobromated camphor. A tablespoonful of the solution, which may be aromatized to suit the taste, weighs 20 grams and contains 0·10 gram (1½ grains) of the bromine compound.

The author endeavored to effect the formation of monobromated camphor by heating bromine and camphor in the requisite proportion in the presence of alcohol and simple syrup, but although obtaining a colorless liquid, is inclined to regard it as containing mainly hydrobromic acid and unaltered camphor.—*L'Union Phar.*, 1876, December, 353.

I. Munday recommends an elixir of double the strength of the preceding, and suggests the substitution of sugar by glycerin, which retains the bromated camphor much better in water, remaining even perfectly clear with water in such proportions, which would separate a portion of the medicinal compound as a film from a saccharine elixir. He mixes 12 grams of 90 per cent. alcohol, 8 orange flower water and 10 glycerin, and dissolves in the mixture 0·30 gram monobromated camphor by the aid of a gentle heat.—*Phar. Jour. and Trans.*, 1877, March 3.

A new mode for the treatment of antiscorbutic plants has been communicated to the Paris Pharmaceutical Society by Messrs. Dusart and Chapoteaut. The authors noticed that when fresh horse-radish root and the fresh leaves of scurvy grass and water cress are subjected to strong pressure, the resulting juice is but slightly charged with the odorous principle, nearly the whole of which remains in the press-cake, which, when macerated or displaced with alcohol, will yield a tincture strongly charged with the volatile oil contained in these vegetables. Based upon this observation, the authors recommend a modification of the process for the antiscorbutic syrup of French pharmacy, substituting the wine ordered by one-fourth its weight of stronger alcohol and three-fourths of water. The juice, expressed as above, although it contains but little volatile oil, resists putrefaction for a long time.—*Rép. de Phar.*, 1876, p. 737.

Gynandropsis pentaphylla, a plant often met with in our gardens, is, according to Prof. W. Dymock, known in India as *kanphootee*, and its juice, like that of *Polanisia icosandria*, is used in purulent discharge from the ears.

Tous-les-mois is stated, in the "Bombay Flora," to be obtained from *Canna lutea*. Prof. Dymock finds its starch to correspond with the commercial article. The rhizomes of *C. indica* and *C. discolor* yield a similar starch; but they also contain a good deal of coloring matter, from which the rhizome of *C. lutea* is almost free.—*Phar. Jour. and Trans.*, Dec. 2.

Picric Cotton has recently been employed in some of the French hospitals, for the dressing of wounds, upon the recommendation of Dr. Eug. Curie. Mr. P. Vigier has prepared it by dissolving 0·25 grams of picric acid in 25 grams of ether, or of 94 per cent. alcohol, and immersing in this solution 10 grams of clean cotton, taking care that, by moderately pressing in every direction, it is uniformly moistened, after which it requires merely to be dried at a moderate heat.—*Rép. de Phar.*, 1876, p. 705.

Alkaloid in Heliotropium europæum.—Battandier boiled about ten kilos of the plant with acidulated water, evaporated the decoction to a syrupy consistence, precipitated by strong alcohol, and evaporated the alcohol from the clear filtrate; the residue was treated with potassa and ether, the green etherial solution with water acidulated with sulphuric acid and this aqueous liquid again with potassa and ether. The

etherial solution was now colorless, and on evaporation left a thick oil, which gradually concreted into a butyraceous mass, composed of microscopic crystalline lamellæ, and afterwards formed prisms weighing about 2.5 grams. It is soluble in water and diluted acids, has a bitter taste like quinia, is white, easily turning yellow, and when heated fuses and partly volatilizes. Its salts burn with a hornlike odor, leaving a voluminous charcoal, and in solution become dark-colored and odorous.

This *heliotropia* is precipitated by tannin, potassio-iodide of mercury, potassio-iodide of bismuth, biniodide of potassium and picric acid; alkalies separate it in white oily drops; bromine converts it into a resin-like mass. Frœhde's reagent produces a brown, and potatsium bichromate with sulphuric acid a green color. It is not affected by acids, platinic or mercuric chloride. The sulphate and hydrochlorate could not be obtained crystallized. The alkaloid is poisonous, but requires larger doses than either strychnia or morphia. Heliotropium peruvianum appears to contain a larger proportion of the alkaloid. Hel. supinum and curassavicum have not yet been examined by the author.—*Rép. de Phar.*, 1876, p. 673 and 739.

EXTRACTUM COLOCYNTHIDIS COMPOSITUM.

By Olaf Martin Oleson, Ph.G.

(*Abstract from a thesis presented to the Philadelphia College of Pharmacy.*)

It has been the author's aim to devise a process by which the quality of the compound extract of colocynth may be approximately determined. Since the active principles of the different ingredients cannot be readily isolated and no methods are known for determining them quantitatively (perhaps scammony resin excepted), it was determined to try the effects of simple solvents upon the alcoholic extracts of the ingredients with the view of making use thereof for the determination of the purity of the officinal extract.

The different ingredients entering into the compound extract of colocynth experimented upon, were selected from the best in the market. The resin of scammony answered to the tests of the U. S. P. The extract of colocynth, as also the purified aloes, were prepared according to the "Pharmacopœia." The cardamoms were freshly powdered. The soap was obtained from good commercial "white Castile," dried on a water-bath and powdered.

The course of analysis pursued was as follows: Ten (10) grams each of the different ingredients were percolated, separately, with stronger alcohol, until the percolate passed colorless and tasteless; the

solution was evaporated and the residue dried on a water-bath and weighed. It was next treated with ether and the residue left on evaporation with petroleum benzin. The part insoluble in the latter liquid was next dissolved in solution of potassa, and the solution supersaturated with dilute muriatic acid; the precipitate, if any, was washed with water, dried and weighed. The part soluble in petroleum benzin was, also, nearly soluble in solution of potassa, but almost wholely precipitated with dilute muriatic acid. The solubilities of the five ingredients in the different menstrua will be seen in the following table, which is the average of three different experiments, agreeing closely in their results:

Ten Grams	Soluble in stronger alcohol.	Soluble in ether.	Soluble in petroleum benzin.	Insoluble in petroleum benzin.	Soluble in solution of potassa.	Not precip. by dil. muriatic acid.
Purified aloes,	8·87	·66	·26	·40	·40	.04
Ext. of colocynth,	6·63	·81	trace.	·75	·70	trace.
Cardamom,	·72	·18	·12	·06	·06	trace.
Soap,	6·00	1·76	·15	1·55	1·55	insol.
Resin of scammony,	10·00	10·00	——	10·00	10·00	10·00

The ingredients enter into the composition of compound extract of colocynth in the following proportions (following the order in which they are enumerated in the preceding table), 24, 7, 3, 6 and 6, making a total of 46 parts. By multiplying each figure, as given in the above table, with the figure indicating the proportion of the ingredient, and dividing by 46, the relative amount of each, as contained in 10 grams of the extract, is found, if the latter be treated in the manner indicated above:

	Sol. in strong alcohol.	Sol. in ether.	Sol. in petroleum benzin.	*The portion ins. in benzin is* Soluble in potassa.	Not precip. HCl.
Purified aloes,	4·63	·34	·14	·21	·02
Ext. colocynth,	1·01	·12	trace.	·11	trace
Cardamom,	·05	·01	·01	trace.	trace.
Soap,	·79	·23	·02	·20	"
Res. scammony,	1·30	1·30		1·30	1·30
Total,	7·78	2·00	·17	1·82	1·32

The compound extract of colocynth was made from the ingredients used in the above experiments, and was then subjected to the same treatment, three assays being made. The officinal extract, as obtained from a manufacturer of undisputed reliability, was likewise assayed twice; the results (averages) obtained in these assays as compared with the theoretical results calculated from the experiments upon the simple substances, will be found in the following table:

Ten grams Comp. extr. colocynth,	Soluble in strong strong alcohol.	Alcoh. extract sol. in ether.	*Etherial extract.* Sol. in benzin.	Insol in benzin.	Insoluble portion dissolved in KHO, then acidulated by HCl. Remains dis.	Precip.
Theoretical Yield,	7·78	2·00	·17	1·83	1·32	·51
Own make,	7·11	4·12	·90	3·00	2·55	·45
Manufacturer,	7·70	4·35	1·00	3·25	2·13	1·12

On comparing the results in the last table, it will be seen that they do not exactly correspond. The amounts soluble in stronger alcohol are nearly alike. The ether, on the contrary, dissolved twice as much when the ingredients were all mixed together as when they were treated separately. In order to verify this by direct experiment, I took one gram of the compound extract of colocynth, also one gram of each of its ingredients, put them separately into six two-ounce vials, and treated them respectively with one and a half fluidounces of ether, shaking them occasionally for two days. The ether was next poured off and evaporated, and by weighing, it was found that the soluble portion of the compound extract of colocynth weighed a little more than twice as much as the sum of the soluble parts of the ingredients, treated separately, calculated in the same proportion as they exist in the compound extract. The petroleum benzin, as well as the solution of potassa, dissolved more of the compound extract of colocynth than they did of its component parts, when treated with them separately; while the dilute muriatic acid did not throw down as much precipitate as was calculated, from the amount of scammony resin, which was expected to be the only principle remaining in solution. It will be seen from the above, that there is something else in this extract, besides the resin of scammony, that is soluble in solution of potassa, and not precipitated by dilute muriatic acid. It may be that the soap, or some of the other ingredients, act as solvents.

I tried to separate, from the compound extract, the aloes, soap and part of the extract of colocynth, by treating it with water; as the two first are almost entirely soluble, and the latter partially so, in that menstruum. By experiments it was found that nearly all of the compound extract of colocynth was dissolved, which was undoubtedly due to the solvent action of the soap.

A METHOD of DETECTING and ESTIMATING CASTOR and OTHER FIXED OILS in BALSAM COPAIBA.[1]

By Dr. Muter.

This oleo-resin, commonly but wrongly termed a balsam, has been said, in books, for many years back, to be subject to admixture with

[1] Read before the Society of Public Analysts, November 15th, 1876. From "The Analyst," November 30, 1876.

fixed oils, especially castor oil. The "British Pharmacopœia" furnishes a qualitative method of examination, but the tests are, in practice, totally insufficient, as the exact degree of rectification of the benzol (an important point) is not stated, and the difference between a pure balsam stain and that with a small percentage of oil is very slight, unless the two are observed side by side. The other methods which have been proposed may be summarized as follows:

1. Pure balsam gives a translucent and not an opaque emulsion, with strong solution of ammonia.

2. Pure balsam, if boiled with water for some hours, leaves a tenacious resin.

3. The specific gravity.

The latter test is entirely fallacious, owing to the great variation in commercial samples, and the others, though possibly characteristic with large admixtures, fail with anything under 20 per cent.

Observing the close affinity between copaivic and pinic acids, it struck me that advantage might be taken of the difference of solubility of the sodium soaps in certain menstrua. A very good solvent for sodium pinate has been discovered by M. Barfoëd to be a mixture of five parts, by volume, of *absolute* ether, and one part *absolute* alcohol, which, moreover, only dissolves sodium oleate to an exact extent, corresponding to 1 in 1000 of oleic acid. I will not occupy space by detailing, at length, the numerous experiments on a great number of samples of balsam, varying in age and color, from every known commercial source, but the whole thing ended in the certain conclusion that besides the essential oil (which is dissipated in the process of analysis) good commercial balsam contains only copaivic acid, which forms a sodium salt, instantly soluble in the ether-alcohol mixture, and a little altered resin not so readily saponifiable, forming a salt only slowly soluble. The amount of this second resin I have found to vary slightly, and, in very old samples, especially of Maranham balsam, may sometimes amount to 5 per cent., although usually really less. Going upon the principle that performing any official analysis the lowest commercial standard should be taken, I have adopted six per cent. as the highest possible quantity of the second resin ever existing in any sample of balsam still having a trace of odor remaining.

This wide standard may sometimes lead to an under-estimation of the oil by two or three per cent., but renders any over-estimation impossible.

The actual process I employ is as follows: 3 to 4 grams of the sample are weighed into a clean, dry flask, and saponified on the water-bath with 50 cc. of alcohol and a lump of caustic soda, weighing not less than 5 grams. When all is dissolved water is added, and the whole washed into a half-pint basin so as to nearly fill it, and evaporated to 100 cc. over a low gas flame. Dilute sulphuric acid is then added until the whole just becomes permanently turbid, and then solution of caustic soda is dropped in till it *just clears* again. By this means a solution is obtained with the least possible excess of alkali, and with a good amount of sodium sulphate. The whole is now evaporated to *perfect dryness*[1] on the water-bath, stirring towards the end, so that the sulphate may mix with the soaps and produce an easily pulverulent residue. The residue is removed from the basin into a small, wide-mouthed, stoppered bottle, and treated with 70 cc. of ether-alcohol, and well shaken up. As soon as it is fairly settled the fluid is filtered off through a *quick* filter, and this is repeated with two successive quantities of 70 cc., making 210 cc. in all of the solvent used. The residue in the bottle and on the filter now consists of sodium oleate and sulphate if the balsam be impure, and of the latter only if pure, with a little trace of the insoluble resin soap already referred to. The contents of the bottle and filter are then dissolved in warm water, and, after heating until all smell of ether is gone, the whole is boiled, freely acidulated with hydrochloric acid and set to cool. If, when cold, nothing but a few specks of brown resin should rise to the surface, the balsam is pure, but if an oily layer be formed, it is adulterated, and the smell of the separated oleic acid will at once determine whether it is actually castor oil or not. In the case of the presence of oil, two grams of pure and dry white wax are added, and the whole heated till the wax melts with the oleic acid. On cooling a solid cake is formed, which is detached from the side of the beaker and the fluid below passed through a filter. The cake is once more melted in boiling water, cooled, detached, dried by gentle pressure in blotting paper, put into the water oven in a weighed

[1] The best way to insure absolute dryness is to moisten the apparently dry residue with a few drops of absolute alcohol and again dry.

platinum dish till dry, and then weighed, and the weight of the wax used deducted. The beaker, filter and rod, etc., used are, if at all dirty, dried, extracted with ether, and the residue left, after evaporation weighed and added to the total.

The calculation is then performed as follows:

1. To the weight in grams found add ·20 for loss of oleic acid in solvent, and then say as

95 : 100 :: total oleic acid.

2. Calculate to per cent. from the quantity taken, and from the total per centage deduct six per cent. for possible altered resin in the balsam.

Out of the whole number of samples I have done, I have selected the following twelve as being fair representations of the degree of accuracy obtainable by the process. The error, owing to the correction, of course, increases with the amount of oil present, but it is always an error in the direction of under-estimation, which is the great point for public analysts.

Nature of Sample.	Calculated.	Found.
Para (pale)	Pure	No oil drops.
Para (pale)	23·60 per cent. castor	23·50
Old Para (dark)	Pure	No oil drops.
Old Para (dark)	51·0 per cent. castor	50·0 per cent.
Carthage (medium)	Pure	No oil drops.
Carthage (medium)	21·5 per cent. castor	21·20
Maranham (pale)	Pure	No oil drops.
Maranham (pale)	26·5 per cent. castor	26.27
Old Maranham (darkish, very little odor)	Pure	No oil drops.
Old Maranham (darkish, very little odor)	47·3 per cent. castor	46·4
Para (fine pale)	Pure	No oil drops.
Para (fine pale)	21·4 per cent. lard oil	20 9

In conclusion, I may say that the process, although it looks formidable, is in practice very simple, and for all ordinary purposes, if the beaker be well scraped out, the weight of the main cake may be taken as sufficient to give an analysis true within 3 per cent. *below* the real amount, which is accurate enough for public purposes, and saves time and the expense of the extra ether. Unless oil actually floats and *remains*, *on cooling*, *in fluid drops*, after adding the hydrochloric acid, the sample may be passed as good.

When working on three to four grams, with an admixture of not over 25 per cent., the errors due to loss of oleic acid and insoluble

resin soap respectively so nearly balance each other that any correction is unnecessary, and the actual amount of oleic acid found may be taken as correct within a per cent.—*Phar. Jour. and Trans.*, Dec. 30, 1876.

VARIETIES.

Notes on Perfumery. By WM. SAUNDERS, London, Ont.[1]—*Alcohol.*—One of the first requisites in the manufacture of good perfumes is pure alcohol, free from fusel oil or other foreign flavor. This purer grade of spirit is known in commerce as pure spirits, silent spirits, or deodorized alcohol, and may readily be distinguished from ordinary alcohol by the absence of that peculiar pungency of odor which is present to a greater or less extent in most commercial samples.

Ottos or Essential Oils.—It is of the greatest importance that these should be strictly pure and of the finest quality.

Pomades.—From these are prepared some of the simple extracts in the appended formulas, such as jasmine, tuberose, and cassia. The quality must be that known as triple pomade. The simple extracts are prepared as follows: one pound of the pomade is cut in small pieces and placed in a bottle of sufficient capacity, in which is put a pint of pure spirit. Place the bottle suitably stoppered in a water-bath, and apply heat sufficient to barely melt the pomade, shake well together, and repeat the shaking frequently until the fatty matter solidifies. In this way the pomade will be reduced to a finely divided or granular state, permeated thoroughly by the spirit. Allow this to stand for several days, giving it an occasional shake, then drain off the liquid extract into another bottle; if this fall short of a pint repeat the operation with a sufficient quantity of alcohol to make up to this measure. By subsequent and similar treatment, a second and even a third quantity of extract may be made, which although much weaker, will be found useful in the preparation of cheaper perfumes.

Extract of Orris.—Seven pounds of finely ground orris root of good quality is treated by percolation with pure alcohol until one gallon of extract is obtained.

Extract Vanilla.—Four ounces of vanilla beans of the finest quality, powdered finely in a mortar with a sufficient quantity of dry white sugar (from four to six ounces), pack in a percolator, and percolate with proof spirit until one gallon is obtained.

Extract Tonka.—Take one pound of tonka beans, reduce to a coarse powder, and percolate with alcohol to make one gallon.

Extract Musk.—Take of pure grain musk of the first quality two drachms. Mix half an ounce of liquor potassæ with four ounces of proof spirit, and triturate the musk with this mixture until it is thoroughly softened, and reduced to a creamy state; add enough proof spirit to make up about one pint; stir well, then allow the

[1]The introductory part of this paper contains some historical notes and general remarks on perfumery which will be read with interest in the Proceedings of the American Pharmaceutical Association, 1876. We can make room for the practical part only.—EDITOR.

coarser particles to subside, and pour off the supernatant fluid. Rub the coarser portions again with a fresh portion of spirit, proceeding as before, and repeat the process until the musk is entirely reduced, and the quantity of extract measures three pints. Allow this to stand for a fortnight with occasional shaking, when it will be ready for use.

Extract Styrax.—Eight drachms of styrax balsam dissolved in one pint of alcohol.

Benzoic Acid.—Only that prepared from gum benzoin should be used.

FORMULAS.

Jockey Club.

Ext. Jasmin,	5 ounces
" Orris,	20 "
" Musk,	7 "
" Vanilla,	1½ "
Otto Rose, Virgin,	1½ drachms
" Santal Flav.,	1½ "
" Bergamot,	2½ "
" Neroli Super.,	40 minims
Benzoic Acid,	2 drachms

Pure Spirit, sufficient to make four pints.

In this, as well as in all the following extracts, before adding the last portion of the spirit, replace as much of it with water as the perfume will bear without becoming milky, which will vary from two to eight ounces or more. This addition will make the perfume softer.

Ylang Ylang.

Ext. Tonka,	3 ounces
" Musk,	4 "
" Tuberose,	4 "
" Cassia,	4 "
" Orris,	8 "
Otto Orange, *new*,	2 drachms
" Neroli, Super,	½ drachm

Pure Spirit, sufficient to make four pints.

Tuberose.

Ext. Tuberose,	24 ounces
" Musk,	4 "
" Jasmin,	1 "
Otto Rose, Virgin,	1 drachm
" Neroli, Super,	10 minims
Benzoic Acid,	2 drachms

Pure Spirit, sufficient to make four pints.

Moss Rose.

Otto Rose, Virgin,	2 drachms
" Santal Flav.,	2 "
Ext. Musk,	12 ounces
" Vanilla,	4 "
" Orris,	2 "
" Jasmin,	4 "
Benzoic Acid,	1 drachm

Pure Spirit, sufficient to make four pints.

Victoria.

Otto Rose, Virgin,	2 drachms
" Neroli, Super,	2 "
" Bergamot,	4 "
" Coriander,	16 minims
" Pimento,	24 "
" Lavender (English),	16 "
Ext. Jasmin,	2 ounces
" Orris,	16 "
" Musk,	2 "
Benzoic Acid,	2 drachms

Pure Spirit, sufficient to make four pints.

Ess. Bouquet.

Ext. Musk,	4 ounces
" Tuberose,	2 "
Otto Rose, Virgin,	1 drachm
" Bergamot,	1½ "
" Neroli, Super,	½ "
" Verbena, *true*,	8 minims
" Pimento,	10 "
" Patchouly,	3 "
" Red Cedar Wood, *true*,	½ drachm
" Lavender, English,	12 minims

Pure Spirit, sufficient to make four pints.

Wood Violet.

Ext. Orris,	12 ounces
" Tuberose,	2 "
" Jasmin,	1 "
" Musk,	4 "
Otto Bergamot,	2 drachms
" Lavender, English,	1 drachm
" Verbena, *true*,	10 minims
" Amygd. Amar.,	12 "
" Coriander,	6 "
" Sweet Flag,	4 "
" Bay Leaves,	4 "
Benzoic Acid,	1½ drachm

Pure Spirit, sufficient to make four pints.

West End.

Ext Orris,	12 ounces
" Jasmin,	4 "
" Musk,	8 "
" Cassia,	4 "
" Styrax,	1 "
Otto Bergamot,	3 drachms
" Verbena, *true*,	15 minims
" Neroli Super.,	½ drachm
" Rose, Virgin,	1 "
" Red Cedar Wood, *true*,	1 "
Benzoic Acid,	1 "

Pure Spirit, sufficient ro make four pints.

White Rose.

Otto Rose, Virgin,	2 drachms
" Red Cedar Wood, *true*,	6 minims
" Patchouly,	4 "
" Orange, *fresh*,	½ drachm
Ext. Tuberose,	2 ounces
" Orris,	2 "
" Jasmin,	2 "
" Musk,	2 "
Benzoic Acid,	1 drachm

Pure Spirit (to which four ounces of rose-water has been added), sufficient to make four pints.

Rondeletia.

Otto Lavender, English,	1 ounce
" Cloves,	½ "
" Bergamot,	¼ "
" Rose Geranium, *Turkey*,	2 drachms
" Cinnamon, *true*,	20 minims
" Rose, Virgin,	10 "
" Santal Flav.,	1 drachm
Ext. Musk,	2 ounces
" Orris,	4 "
" Vanilla,	2 "
Benzoic Acid,	1 drachm

Pure Spirit, sufficient to make four pints.

Patchouly.

Otto Patchouly,	2 drachms
" Santal Flav.,	40 minims
" Rose, Virgin,	40 "
Ext. Musk,	8 ounces
" Orris,	8 "
" Vanilla,	4 "
" Styrax,	2 drachms

Pure Spirit, sufficient to make four pints.

Musk.

Ext. Musk,	1 pint
" Orris,	6 ounces
" Vanilla,	2 "
" Styrax,	2 drachms
Otto Santal Flav.,	1 drachm
" Bergamot,	2 drachms
" Neroli, Super,	10 minims
" Patchouly,	12 "
" Lavender, English,	15 "
" Cinnamon, *true*,	6 "

Pure Spirit, sufficient to make four pints.

Spring Flowers.

Ext. Orris,	4 ounces
" Jasmin,	4 "
" Musk,	4 "
Otto Bergamot,	2 drachms
" Neroli, Super,	½ drachm
" Verbena, *true*,	10 minims
" Red Cedar Wood, *true*,	1 drachm
Benzoic Acid,	1 "

Pure Spirit, sufficient to make four pints.

Stephanotis.

Ext. Cassia,	4 ounces
" Tuberose,	4 "
" Jasmin,	2 "
" Musk,	8 "
" Orris,	8 "
" Tonka,	3 "
Otto Rose, Virgin,	1 drachm
" Neroli Super.,	½ "
Benzoic Acid,	1 "

Pure Spirit, sufficient to make four pints.

Millefleurs.

Otto Rose, Virgin,	1 drachm
" Red Cedar Wood, *true*,	1 "
" Orange, *true*,	1 "
" Pimento,	20 minims
Ext. Orris,	6 ounces
" Jasmin,	2 "
" Styrax,	1 ounce
" Tonka,	4 ounces

Pure Spirit, sufficient to make four pints.

New-Mown Hay.

Ext. Tonka,	25 ounces
" Musk,	6 "
" Orris,	8 "
" Vanilla,	1 "
" Styrax,	1 "
Otto Bergamot,	1 drachm
" Neroli Super.,	15 minims
" Rose, Virgin,	10 "
" Cloves,	6 "
" Lavender, English,	10 "
" Patchouly,	10 "
" Santal Flav.,	1 drachm
Benzoic Acid,	1½ "

Pure Spirit, sufficient to make four pints.

Frangipanni.

Ext. Orris,	4 ounces
" Tuberose,	2 "
" Musk,	4 "
" Vanilla,	2 "
" Jasmin,	1 "
" Styrax,	1 "
Otto Neroli Super.,	1 drachm
" Rose, Virgin,	½ "
" Santal Flav.,	1 "
" Red Cedar Wood, *true*,	1 "
" Pimento,	½ "
" Cassia,	20 minims
" Bergamot,	½ drachm
" Ginger,	4 drops
" Lavender, English,	6 "
Benzoic Acid,	2 drachms

Pure Spirit, sufficient to make four pints.

Clove Pink.

Ext. Jasmin,	12 ounces
" Orris,	12 "
" Musk,	8 "
Otto Rose, Virgin,	1 drachm
" Cloves,	2 drachms
" Neroli Super,	1 drachm
" Pimento,	10 minims
" Patchouly,	20 "
" Santal Flav.,	2 drachms
Benzoic Acid,	1 drachm

Pure Spirit, sufficient to make four pints.

Violet.

Ext. Orris,	2 pints
" Tuberose,	4 ounces
" Vanilla,	3 "
" Musk,	3 "
" Tonka,	2 "
Otto Rose, Virgin,	1 drachm
" Neroli Super.,	40 minims
" Pimento,	12 "
" Bergamot,	1 drachm
Benzoic Acid,	1 "

Pure Spirit, sufficient to make four pints.

Mignonette.

Ext. Orris,	12 ounces
" Tuberose,	4 "
" Vanilla,	4 "
" Musk,	2 "
Otto Rose, Virgin,	1 drachm
" Neroli Super.,	1½ "
" Pimento,	12 minims
Benzoic Acid,	1 drachm

Pure Spirit, sufficient to make four pints.

Discrimination of Fibres in Mixed Fabrics (Silk, Wool, Flax, Hemp, Cotton and Phormium). [*Pinchon, polyt. Zeitsch.*]—Treat with caustic soda or potassa:

A. The fibres are attacked and partly dissolved:

a. Chloride of zinc does not dissolve:

1. Nitric acid colors yellow = *Cotton.*
2. Nitric acid does not color = *Flax.*

b. Chloride of zinc dissolves some of it:

1. Lead salts do not color black:
   - *α.* Picric acid colors yellow = *Silk.*
   - *β.* Picric acid does not color = *Cotton.*
2. Leadsalts color part of it black:
   - *α.* Caustic potassa dissolves some of the fibres insoluble in zinc chloride = *Wool.*
   - *β.* The remaining fibres are soluble in ammonio-oxide of copper = *Silk, cotton.*

B. All fibres are dissolved in the lye:

a. Chloride of zinc does not dissolve:

1. Chlorine water, followed by ammonia, does not color:
   - *α.* An alcoholic solution of fuchsin (1-20) dyes red, but the color

can be washed off, and caustic potassa does not color the fibres yellow = *Cotton.*

β. The red color (by fuchsin) can not be washed off; the fibres are colored yellow by caustic potassa:

γ. Iodine and sulphuric acid color yellow = *Hemp.*

ε. Color blue = *Flax.*

2. Chlorine water and ammonia colors reddish-brown, and the fibres are colored red by nitric acid = *Phormium.*

b. Chloride of zinc dissolves part of it or not at all:

1. Insoluble; colored black by lead salt = *Wool.*

2. Partially soluble.

α. The soluble part is not blackened by lead salt = *Silk.*

β. The insoluble is blackened by lead salt = *Wool.*

c. Chloride of zinc dissolves everything in the cold; the alkaline solution is not blackened by lead salt = *Silk.*—H. M. W. from *Ny Pharm. Tid.*, 1877, p. 45.

Variations in the Use of Medicines.—Some interesting statistics are given in the "Archives Generales" on the amount of some new remedies supplied by the medical men of the Assistance Publique. In 1869, the Central Pharmacy distributed 141 kilograms of chloroform against 308 kilograms in 1875. Chloral showed a still more rapid increase. In 1869 only 5 kilograms were required; while in 1875 360½ were consumed. Iodoform, from 250 grams in 1859, rose to 28 kilograms in 1875; bromide of potassium rose from about 3 kilograms in 1855 to nearly 800 kilograms in 1875; opium showed but small variations, but the same cannot be said of morphia, no doubt from the general use of hypodermic injections, for, from 275 grams in 1875 the amount rose to the enormous quantity of more than 10,000 grams. A very large augmentation in medicinal substances was also seen in the alcohol used in the hospitals and infirmaries of Paris. Thus, in 1855, the Assistance Publique only appropriated 1,270 litres of alcohol to the use of the sick, while, in 1875, 37,578 litres were used. The same increase is noticeable in rum and red wine. The use of white wine was sensibly diminished. The use of leeches has gone nearly out of fashion. In 1834 and the following years up to 1837, the number of leeches employed exceeded a million; in 1874 the number had fallen to 49,000 only. The consumption of sulphate of quinia is on the increase, and represents 53,734 grams in 1875 against 24,525 in 1855.—*Med. and Surg. Rep.*, Feb. 24.

Test of Bile.—Dr. James Sawyer says, in a note to "The Lancet" on the use of iodine as a test for bile in urine: "I have used this test for nearly ten years, my first knowledge of it having been gained from Flint's 'Practice of Medicine.' I have found it best to place two or three drops of iodine liniment in a test-tube, and then to add about two drachms of the suspected urine. If the coloring-matter of bile be present the mixture will assume, on agitation, a brilliant sea-green color. This is a ready and reliable test, and one which I have long preferred to all others with which I am acquainted.—*New York Med. Jour.*, Feb.

Gilding and Silvering of Glass and Porcelain.—E. Hansen has patented the following process: Sulphur is dissolved in oil of spike lavender until it has a semi-liquid consistence; this is mixed with an etherial solution of chloride of gold or of platinum, and the mixture evaporated to the consistence of paint. The surface to be gilt or silvered is then covered with the mixture and the object carefully heated in a muffle, whereby the volatile substances are expelled and the metallic gold or platinum fastened upon the glass or porcelain. The surface, thus metallized, is afterwards plated in the usual manner with solutions of gold, silver or copper, and with the aid of a galvanic battery.—*Chem. Centralbl.*, 1876. No. 50.

The coloring for butter and cheese, which is very extensively employed in Denmark, is made by intimately mixing one part of annatto with half its weight of alcohol, digesting for a week, and then boiling with three to five parts of oil, until the annatto forms dark-brown granules and ceases to impart color to the oil. The price depends in part on the kind of oil employed—rapeseed, olive and other oils being used. To the cheese coloring a little turmeric is usually added. This coloring was first made by N. Blumensaadt, of Odense, but is now largely manufactured at Copenhagen.—*Phar. Zeitung.* No. 5.

Ustilago maidis, the corn-smut or corn ergot, which has been chemically examined by Mr. Ch. H. Cressler ("Am. Jour. Phar.," 1861, p. 306), has been repeatedly recommended for medicinal use, and is again brought forward by Dr. C. Henri Leonard, who has used it in the form of fluid extract in a case of labor, and contrasts its action with that of ergot; the uterine contraction of the latter is regarded as tonic, that from Ustilago seems to be regularly intermittent. If this should be proven to be a characteristic of its action, it will prove even more serviceable in labor than ergot. It was given in the dose of a teaspoonful, repeated in ten minutes; and in spermatorrhœa it proved serviceable in doses of 10 to 20 drops.—*New Prep.*

The Hypnotic Action of Lactic Acid and Lactate of Soda.—Jeruselimsky has tried tried the effect of these substances in animals and in well and sick human beings. The experiments in animals (nine dogs and nine rabbits) gave no definite results, as these animals are not good subjects for the purpose. In himself, two healthy women and three men, the author has obtained only moderate effects with doses varying from 2 drachms to ½ ounce. Lactic acid was administered in twenty-two cases of insomnia in the course of the most different diseases, but especially in hysteria, and the effect was incomplete in only a few cases. In most cases quiet sleep occurred a half to one hour after administration. The remedy was continued from two weeks to two and one half months (two or three times weekly). In combination with morphia, a much smaller quantity of the latter is required. Thus, an hysterical woman, who had been taking as much as two grains of morphia per day, slept five hours after taking one half grain of morphia with one-half ounce

lactate soda.—*Supplement to Med. Chir Centralblatt*, 1876.—*N. Y. Med. Jour.*, Feb., 1877.

The Sudden Checking of Opium Eating.—The eminent Sir Robert Christison, after a large experience in the treatment of such cases, says that no good can be done by "gradual reduction," and that it can be safely left off abruptly, even after many years' indulgence. He recommends bromide of potassium to allay irritability, and chloral to procure sleep. For the first three days the patient suffers from great depression, loathing, sickness and vomiting. By the fourth night he falls asleep and awakes refreshed, and in most cases the progress afterward is very satisfactory. There is, however, great danger of a relapse. Should diarrhœa supervene, suppositories of morphia should be ordered.—*South. Med. Rec.*, Feb.

Expressed Oils of Cherry and Plum Seeds.—Guyot recommends the preparation by expression of the fixed oils which are contained in the seeds of the cherry and the yellow plum (*mirabelle*), particularly in those districts where the liquor known as *kirschenwasser* is manufactured. He obtained by extraction with ether 6·4 per cent. of oil from the former and 10·7 per cent. from the latter seeds. The cherry oil is limpid, golden-yellow, and has a decided almond odor, which disappears on exposure after some time. The plum oil is similar, but darker yellow, and of a stronger almond odor.—*Rép. de Phar.*, 1876, p. 678.

The Dispensing of Copaiba Resin.—Alfred Balkwill proposes the following form of exhibiting copaiba resin, which gives satisfaction to the prescriber and patient. It is no trouble to make, and the mixture, in elegance of appearance, permanence and therapeutic action, is preferable to all other forms.

℞.	Resinæ Copaibæ	ʒiss
	Olei Amygd. dulc.	ʒiv
	Mucilag. Acaciæ	ʒiss
	Liquor. Potassæ	ʒss
	Olei Cinnamomi	gtt. vi
	Aquæ, q. s, ad	ʒvi

A sixth part three times a day.

Dissolve the resin in the oil, with gentle heat, then add the potassa solution, and form an emulsion.—*Phar. Jour. and Trans.*, Nov. 25, 1876.

MINUTES OF THE PHARMACEUTICAL MEETING.

MARCH 20TH, 1877.

The meeting was organized by electing Mr. S. S. Bunting to the chair. C. W. Hancock officiated as Registrar *pro temp.*

Prof. Maisch presented a copy of Lindley's "Natural System of Botany," from D. B. Smith; also, a pamphlet from Dr. H. C. Wood entitled, "The United States Pharmacopœia, and the American Medical Association;" also, samples of Calcutta catechu and gambir, from Messrs. Behn, Meyer & Co.

Mr. Alex. H. Jones presented, through Prof. Remington, from Messrs. Powers & Weightman, a fine collection of argols from various sections of Europe.

Prof. Maisch read a paper by Mr. L. Wolff on "Unguentum hydrargyri nitratis" (see page 162). Dr. Pile said he had followed Mr. Rother's formula of making it with lard, first adding the excess of nitric acid and afterwards the nitrate of mercury, and found it very successful. He also questioned whether oleic acid could be procured at all times of sufficient purity. Prof. Remington thought the process of Rother all that can be desired, and the substitution of three-fourths lard oil for the lard a wise selection, his experience being similar to Dr. Pile's; but he thought that Mr. Wolff's views opened an interesting point in regard to the change in oleic acid and the ointment under consideration.

Mr. C. Bullock spoke of the citrine ointment, as formerly prepared by John Bell of London, as being particularly noted for its fine appearance, and thought it due to the manipulation in beating it up well before and while it congealed.

Dr. Pile requested the members to inform the Committee on Adulterations of the National Association of any sophistications that may come under their notice, and endeavor to accompany their communications by specimens.

Prof. Remington said that Prof. Painter, the chairman of the committee referred to, expressed a wish that some of the members would take up for their investigation the amount of extractive matter left after the evaporation of some of the important officinal tinctures. Prof. Maisch did not see how any positive results could be obtained, since slight variations in the menstrua could influence the result aside from the differences naturally existing in the drugs.

C. W. Hancock presented a sample of an ocher yellow color, purchased for oxide of antimony, which, without resorting to chemical test, the general expression of the members present declared it not to be, at least not pure enough for medicinal use.

Mr. Bullock mentioned that their house had recently received from a house in Baltimore a sample of nitrate of potassium, which by its appearance aroused his suspicion, and upon making an examination found about 25 per cent. of chloride of potassium. This salt can now be obtained at a low figure, it being one of the products from the Stassfurt (Germany) mines.

Dr. Miller exhibited a sample of so-called Egyptian saffron, which Prof. Maisch pronounced to be carthamus. He also alluded to an adulteration of saffron with carbonate of calcium, which is again practised, after it was exposed seven years ago (see "Am. Jour. Phar.," 1870, p. 318 and 390).

Dr. Pile thought the sale of genuine saffron to be on the increase, as compared with the sales a number of years ago.

Prof. Maisch said that in 1871 he investigated the African saffron of the American market, and found it to be carthamus, with the exception of one sample, which Mr. J. R. Jackson correctly referred to Lyperia crocea (see "Proc. Amer. Phar. Assoc.," 1873, p. 487).

Mr. Lowe exhibited samples of yellow wax, in 1 oz. cakes, prepared by placing rectangular tin frames upon plate-glass, pouring in some melted wax, and when this had hardened, enough more to produce a cake weighing about one ounce.

Mr. Bullock, having examined some white wax, found the congealing point below that generally given; and on inquiry being made from the consignees, it seems not

improbable that the fusing point may vary from 5° to 10° F., being influenced by the latitude in which the wax was collected. He urged members to procure specimens of pure wax from different countries to settle this point.

Mr. A. P. Brown presented samples of syrups, made in accordance with the suggestions of one of the students, by percolating the drug with simple syrup or with simple syrup and alcohol, in proportion of 15 fluidounces of the former to 1 of the latter. They all appeared to possess the virtues of the drugs, and presented a fine appearance; the preparing of 1 pint, in some cases, required 8 to 10 days. Prof. Remington said the only question that occurred to him, as to whether percolation with cold syrup would exhaust the active principles of the drug. Several members thought that the solvent power of the sugar would have that effect.

Mr. Wright mentioned as having prepared syrup of orange peel by rubbing the fresh orange peel with sugar, and then percolating with sufficient water, as making a very fine syrup that will bear dilution with its own bulk of simple syrup.

Mr. Wright exhibited a root which had been sold here as calumba. It occurred in longitudinal slices, resembling gentian, but of a much lighter and more yellow color. Prof. Maisch pronounced it to be the root of Frasera Walteri, the so-called American calumba.

Prof. Maisch raised the question when measures were first introduced into pharmacy. He showed a number of old English works in which the signs ℥ and ℔ were used for both liquids and solids; also, some stating that great uncertainty existed, and that they were then interpreted by some as meaning measures, by others weights only. He hoped the subject would be further investigated.

Mr. Gerhard mentioned as having utilized the cans in which preserved fruits are sold, for ointments, etc., by melting off the top and then melting the bottom off others to form a top for the former; a sample was presented.

Mr. Wright said that he had been so using them, and found them superior to the glazed ware for ointments, which did not become rancid so readily.

Dr. Pile mentioned that he had experimented with cloves, exhausting them with gasolin (3 qts.), and obtained (from quantity?) 4 ounces of oil of fine flavor and greenish color.

Dr. Miller thought that the yield mentioned at the last meeting in regard to obtaining 3 lbs. essential oil from 25 lbs. of cubebs, must have been an error, and was going to convince himself again of the fact. Two samples of oil of ylang-ylang were exhibited by Dr. Miller; there was a marked difference in the odor.

C. W. HANCOCK, Registrar *pro temp.*

PHARMACEUTICAL COLLEGES AND ASSOCIATIONS.

PHILADELPHIA COLLEGE OF PHARMACY.—The lectures of the fifty-sixth course closed on Wednesday, Feb. 28th, and the examination commenced March 1st, and lasted until Tuesday, March 6th. The written examinations were on the following subjects, one afternoon being allowed to each branch:

QUESTIONS ON CHEMISTRY.

1. What is the proper chemical name for Borax? Give the sources from which it is derived, its composition and physical properties.

2. How is Chlorine obtained? Explain the process and give the formula for the reactions which take place. State its physical and chemical properties and what officinal metallic compounds free Chlorine is used to produce, with chemical formulæ of the reactions.

3. What are the proper chemical names for Calomel and Corrosive Sublimate? Give and explain the mode of preparation of each. State the distinctive chemical and physical properties and the differences in their medicinal activity.

4. What are the best antidotes for the Alkalies? The mode in which they act, and state which can be usually most promptly obtained.

5. What are the compounds formed in fermentation of the juices of fruits? State what is the substance from which they are derived and explain their formation.

6. What are the antidotes for Arsenic? State the form in which they are the most reliable.

7. What is the action of pure water and air on Metallic Lead? What impurities generally exist in river water and prevent this action?

8. What is Alumen, U. S. P.? Give its mode of preparation, properties and composition.

9. What are the forms in which Sulphur is given internally as a medicine? Give the mode of preparation of each.

10. By what test may Nitric Acid be detected as an impurity in Oil of Vitriol? Explain the changes which take place.

11. What are the changes which take place in a solution of Ferrous Sulphate when exposed to the action of the air?

QUESTIONS IN MATERIA MEDICA AND BOTANY.

1. Give the botanical characters of the natural order of *Ranunculaceæ*, and of its two suborders. Name the officinal drugs obtained from each suborder.

2. Which *officinal roots* are obtained from plants of the natural order of *Gentianaceæ?* Give the names and habitat of the plants; point out the physical differences of the roots; state how their solutions are affected by iron salts; name the characteristic principles found in the roots, and widely diffused organic principles absent from them. What are their medicinal properties?

3. Give the name, natural order and habitat of the plant yielding *Jalap*; describe the part used in medicine, as to its physical properties and structure; name the active principle, its properties and chemical relations, and state how it may be distinguished from other allied principles.

4. Give the names and native countries of the *lauraceous trees* yielding officinal *barks*; describe the principal physical and structural characteristics and enumerate the medicinally important principles of these barks.

5. How may the officinal *narcotic leaves* be distinguished from each other?

6. Which plants of the *Aurantiaceæ* yield officinal drugs? Describe the *pericarps* obtained from them, as to their physical properties, structure and characteristic principles.

7. Give the name, natural order and habitat of the plant yielding *sabadilla seeds*; describe the physical properties and structure of the seeds and give the outlines of the process for obtaining their alkaloid.

8. What is *Lupulin?* From what plant and from which part is it obtained? Name its physical properties, structural characteristics, important constituents and medicinal properties.

9. Give the name, natural order and habitat of the plant from which *oil of wintergreen* is obtained. Describe the oil, its chemical constitution and the manner in which the usual adulterations may be detected.

10. Give the name, class and native country of the *muskdeer*. Where is the *musk sac* located, and what are the physical and structural characteristics of its genuineness? How may adulterations of *musk* be detected?

QUESTIONS IN THEORETICAL AND PRACTICAL PHARMACY.

1. Two hundred and four grams of an officinal substance lose by immersion in "stronger Alcohol" two thousand four hundred and fifty-one centigrams. What is the substance? Show the method of obtaining the answer.

2. Name the units of Measure, Capacity and Weight in the Metrical System, and state briefly how they were obtained. Give the approximate value of the fluid-ounce in cubic centimetres, of the Kilogram in avoirdupois weight, of the Litre in apothecaries' measure.

3. Define the process and state the objects of sublimation. How does it differ from distillation? Mention three well-known substances found in Pharmacy in a sublimed condition, and describe the appearance of each.

4. Explain the theory of the vinous fermentation in grape juice, the name and chemical composition of the substance deposited in wine casks. How is its peculiar acid isolated?

5 Name the substances used in preparing Ether, Chloral hydrate and Glycerin. Give, briefly, their mode of preparation, with the characteristic properties of each.

6. Give the strength and doses of all of the liquid Aconite preparations (officinal and otherwise) that you know of. What is the physical test for Aconite, and what is its active principle?

7 State the proportions and doses of the officinal liquid preparations of Opium.

8. Name the ingredients used in the following preparations of the United States "Pharmacopœia": Confectio Opii, Extractum Ergotæ Fluidum, Ferri et Quiniæ Citras, Infusum Rosæ Compositum, Liquor Iodinii Compositus, Potassii Acetas, Pulvis Rhei Compositus, Spiritus Ammoniæ Aromaticus, Syrupus Rhei and Vinum Aloes.

9. Give the officinal process for preparing Veratria, the tests for it, and its principal use in medicine.

10. Define the terms Alkaloid and Glucoside. To what class of chemical substances does Tannic Acid belong? By what tests may it be recognized? What is the nature of the change that is apt to occur in Tinctures of drugs containing this substance?

QUESTIONS BY THE EXAMINING COMMITTEE.

1. In what combination is Mercury chiefly found in Nature? State its specific gravity, its freezing and boiling point in Fahrenheit and Centigrade degrees. What is the officinal name of Calomel? State how it is prepared and what impurity it is likely to contain. Name a test for mercuric and mercurous salts in solution.

2. Name N_2O, NO, HNO_3 in the new nomenclature. Describe the physical properties of each of these. State how they may be prepared, and give equations for each, showing the chemical changes by means of Symbols.

3. Give the officinal name, locality and natural order of the plant yielding Seneka. State what part is used, and describe its appearance. Name two of its officinal preparations. Give the name and describe the properties of its active principle.

4. From what crude substance is Phosphorus obtained? Give both processes of the U. S. "Pharmocopœia" for preparing Diluted Phosphoric Acid. What is the specific gravity and saturating power of the diluted Acid? Name an impurity usually contained in Glacial Phosphoric Acid.

5. What is Ergot? Name two of its officinal preparations, and give their composition and dose. What is the therapeutic effect of the drug? How should it be prepared for hypodermic injection?

6. Give the formula for preparing Liquor Plumbi Subacetatis, stating color, taste and specific gravity. What effect is produced by exposure to the atmosphere? Into what officinal preparations does it enter?

7. What is the minimum alkaloidal percentage of the Red and Yellow Peruvian Barks recognized by the U. S. "Pharmacopœia"? Give the officinal and botanical names. What four alkaloids do they contain naturally? How may Salicin and

Hydrochlorate of Cinchonia be detected when used either as substitutes or adulterants of the most important alkaloid in bark?

8. How is Chloroform prepared, and how purified? What is its specific gravity? Give a test for its purity, and its formula in Symbols.

9. Are the following properly constructed prescriptions, therapeutically and pharmaceutically considered? Translate and explain them.

A.

℞—Tincturæ Ferri Chloridi, f ʒ ii.
Syrupi Simplicis, . . f ʒ ii.
Infusi Cinchonæ rubræ, f ℥ v.
Misce.—Fiat mistura de quâ sumatur uncia quartis horis.

B.

℞—Olei Tiglii, . . . n xx
Micae Panis quantum sufficit ut fiat pilula.
Statim sumenda.

C.

℞—Acidi Nitromuriatici.
Tincturæ Humuli
Tincturæ Aurantii āā, . f ℥ i.
Infusi Calumbæ, . . ℥ v.
Misce. Fiat mistura Cochlearia duo magna ter in die.

D.

For Dysentery.

℞—Pulveris Opii.
Pulv. Ipecacuanhæ . āā gr. iii.
Hydrargyri bichloridi gr. vi.
Pulveris Acaciæ
Syrupi ana quantum sufficit.
Misce. Fiat massa in pilulas tres dividenda.
Signetur:—One or more to be taken at bed-time.

E.

10. Write a prescription, using metric weights, for 16 pills, each containing about one grain of sulphate of quinia, ¼ grain of extract of nux vomica and 3 grains of extract of gentian.

F.

Is the following prescription correct, and how is it to be dispensed?

℞—Atropiæ, . . . gr. ii.
Aquæ distillatæ, . . f ʒ i.
Signa:—For the *Eye*. One drop to be applied at night.

G.

How is the following formula to be dispensed?

℞—Plumbi Acetatis.
Zinci Sulphatis, . . āā ʒ ii.
Misce et divide in xxiv partes aequales.
S.—Use as directed.

H.

Criticise the following prescription:

℞—Acid. Hydroc. dil.
Tinct. Card. Comp., āā f ℥ ss.
Aquæ Anisi, . . f ʒ iii.
M. S.—Teaspoonful thrice daily.

The following specimens were upon the table to be examined and named by the candidates, 15 minutes being allowed in each case:

Chemistry.	Materia Medica.	Pharmacy.	Examining Committee.
Potassii carbonas.	Serpentaria, mixed with Hydrastis.	Gentianæ pulvis.	Potassii bichromas.
Potass. bitartras.	Gossypii Radic. cortex.	Hydrarg. cum creta.	Sodii sulphas
Sodii bicarbonas.	Buchu.	Tinct. cardamomi cp.	Acidum citricum.
Sodii hyposulphis.	Salvia.	Extract Buchu fluid.	Canella alba.
Ammonii chloridum.	Cannabis indica.	Syrup. Prunı Virg.	Matricaria.
Liquor calcis.	Sambucus.	Aqua Anisi	Lupulina.
Ferri subcarbonas.	Colocynthis.	Aqua Creasoti.	Mastiche.
Plumbi oxidum.	Piper album.	Liquor Ammonii acet.	Aqua destillata.
Acidum aceticum.	Ign tia.	Acidum benzoicum.	Mistura Glycyrrh. comp.
Acidum oxalicum.	Guaiaci resina.	Cerat. Plumbi subacet.	Unguentum sulphuris.

A practical examination was held for the first time this year, the candidates being required to compound the following prescriptions and finish them, ready for delivery, within one hour:

1.

℞—Ext. Coloc. Comp. . . gr. xvi.
Ext. Jalapæ.
Hydrarg. Chlor. Mit. . āā gr xii.
Pulv. Gambogiæ, . . . gr. iii.
M.
Divide in twelve pills.

2.

℞—Ol. Morrhuæ, ... f ℥ ii.
Pulv. Sacch. Alb. . . . . ℥ ii.
Pulv. Acaciæ, ... ℥ iv.
Aquæ Fluvialis q. s. ad . f ℥ iv
Make into an emulsion.

3.

℞—Pulv. Gallæ, ... gr. xx.
Ext. Stramonii, ... gr. xxx.
Adipis Purif. . . . . ℥ ss.
Make into an ointment.

The following candidates having passed the examination successfully, were recommended for the Degree of Graduate in Pharmacy (Ph.G.) The names are in the order of merit, as ascertained from the examination:

NAME.	STATE.	SUBJECT OF THESIS.
OLESON, OLAF MARTIN,	Iowa,	*Extractum Colocynthidis Compositum*
COXEY, JOSEPH CLARENCE,	Pennsylvania,	*Jaborandi.*
KUHN, NORMAN ARCHIBALD,	Ohio,	*Scilla Maritima.*
ROSENWASSER, NATHAN,	Ohio,	*Colchicum Seed and Colchicin.*
DAVIS, THEODORE GARRISON,	New Jersey,	*Chloral Hydrate with Camphor and Resins.*
BISSELL, EMERY GILBERT,	New York,	*Hops.*
MARTIN, JOHN ALBERT,	Pennsylvania,	*The Rhizome of Dracontium Foetidum.*
DRUEDING, CHARLES CASPER,	Germany,	*Gossypium Radicis Cortex.*
CHILDS, WALTER FOSS,	Pennsylvania,	*Polygonum Persicaria.*
DRUEDING, HENRY GERHARD,	Germany,	*Assay of Quinia in Ferri et Quiniæ Citras.*
BECKERT, THEODORE FREDERICK,	Pennsylvania,	*Colchicum Root.*
WILSON, ALEXANDER,	Pennsylvania,	*Chemical Change.*
BRENNECKE, ROBERT,	Wisconsin,	*Opium.*
GINGRICH, JOHN ADAMS,	Pennsylvania,	*Unguentum Hydrargyri Nitratis.*
BARR, SAMUEL EARNEST,	Ohio,	*Estimation of Morphia in Powdered Opium.*
DE PUY, CASPAR EDWARD,	Iowa,	*The Seed of Delphinium Staphisagria.*
ELFRETH, JACOB R.,	Pennsylvania,	*Emulsion of Cod Liver Oil.*
LINDEWALD, WILHELM EDWARD,	Sweden,	*The Ammonium Theory.*
BOWMAN, CHARLES ALEXANDER,	Tennessee,	*Examination of Commercial Copaiba.*
KOEHLER, WALTER WILLIAM,	Pennsylvania,	*Pulvis et Unguentum Zinci Oxidi.*
SCHOOLS, GEORGE WILLIAM,	Pennsylvania,	*Capsicum.*
BURROUGHS, SILAS MAINEVIELLE,	New York,	*Compression of Medicinal Powders.*
MCMULLIN, ANDREW,	Pennsylvania,	*Zinci Oxidum.*
GATES, BURT PIKE,	New York,	*Assay of Morphia in Laudanum.*
CROWL, FRANK MERCER,	Pennsylvania,	*The Pharmacist.*
GRAHAME, GEORGE HARRIS,	Pennsylvania,	*Cerates and Ointments.*
KLOPP, ELI LEINBACH,	Pennsylvania,	*Potassii Iodidi.*
SMITH, JOSEPH STAHLE,	Pennsylvania,	*Tinctura Opii.*
PARKER, FREDERICK HENRY,	New York,	*Extractum Conii.*
LLEWELLYN, WILLIAM HENRY,	Pennsylvania,	*Laudanums of Commerce.*
FULTON, JOSEPH MILLER,	Pennsylvania,	*Copaiba.*

NAME.	STATE.	SUBJECT OF THESIS.
ZINN, OSCAR,	Wisconsin,	*The Amount of Quinia in Citrate of Iron and Quinia.*
RYERSON, HENRY OGDEN,	New Jersey,	*Ergota.*
SMITH, JOSEPH GRANVILLE,	Kentucky,	*Hydrargyri Chloridum Corrosivum.*
DEMBINSKI, LOUIS,	Pennsylvania,	*Cantharidin from Doryphora Decemlineata.*
FISHER, HENRY,	Pennsylvania,	*A Test for the Adulterations of Oleum Theobromæ.*
MOORE, RICHARD JESSE,	Ohio,	*Salicylic Acid.*
ROE, THOMAS COOMBE,	Delaware,	*Dispensing Prescriptions.*
LATHAM, DANIEL HENRY, JR.,	Pennsylvania,	*Aqua Cinnamomi.*
DRANCOURT, SAMUEL,	France,	*Sugar.*
LAMHOFER, EDWARD,	Nebraska,	*Oleum Theobromæ.*
BUSCH, WILLIAM CHARLES ASMUS,	Iowa,	*Resina Podophylli.*
FUNK, CHRISTIAN LAWSON,	Maryland,	*Home-made Chemicals.*
GRIFFIN, LOUIS FRANKLIN,	Texas,	*The Preparations of Piper Cubeba.*
STROBEL, JOHN, JR.,	Pennsylvania,	*Chemical Affinity.*
MCKEEHAN, GEORGE HENRY,	Pennsylvania,	*Alcohol and its Derivatives.*
BALL, WILLIAM AMOS,	Ohio,	*Chloral.*
ZACHARIAS, ISIDORE,	Georgia,	*The Manufacture of Spirits Turpentine, Rosin and Tar.*
MYERS, EDWIN,	Pennsylvania,	*Arnica.*
UNANGST, EUGENE PETER,	Pennsylvania,	*The Relative Strength of Pepsin.*
WOOLSTON, WM. NORTON SHINN,	New Jersey,	*Erythroxylon Coca.*
GERLING, JOHN MILLER,	Ohio,	*Our Centennial Exhibits.*
EWING, GEORGE WASHINGTON,	Pennsylvania,	*Acorus Calamus.*
BOYER, EDWARD DAYTON,	Pennsylvania,	*Excipients for Pills.*
WEISS, LOUIS,	Colorado,	*A Drug Store in the Far West.*
WALKER, HENRY CRAWFORD,	Delaware,	*Pepsin.*
LUSTIG, EMIL,	Pennsylvania,	*Caloric in Changes of Aggregation.*
KINPORTS, JOHN HENRY,	Pennsylvania,	*Humulus Lupulus.*
APPENZELLER, GUSTAVE ADOLPH,	Pennsylvania,	*Extract. Glycyrrhizæ Depuratum.*
WRIGHT, G. SHOEMAKER ROBERTS,	Pennsylvania,	*Gossypium.*
WILLIAMS, THOMAS DAVID,	Pennsylvania,	*The Tincture and Ammoniated Tincture of Guaiac.*
EVANS, ESTELL,	Pennsylvania,	*Copaiba.*
HARRIS, WILLIAM,	Pennsylvania,	*Pepsin.*
LYNEMAN, FELIX ANTHONY,	Virginia,	*Tinctura Capsici.*
ROSS, DAVID WILLIAM,	Pennsylvania,	*Garrya Fremonti.*
KRAMER, HOWARD SAMUEL,	Pennsylvania,	*Unguentæ.*
SCHEEHLE, GEORGE PHILLIP,	West Virginia,	*Extract of Hyoscyamus as found in the Shops.*
LEVERING, GEORGE WASHINGTON,	Pennsylvania,	*Chloral Hydrate.*
LEWIS, WILLIAM THOMPSON,	New Jersey,	*Protochloride of Iron.*
MCMULLIN, ALBERT,	Pennsylvania,	*Compressed Camphor.*
MARTIN, GEORGE, JR.,	Pennsylvania,	*Potassium Hypophosphites.*
MAULICK, WILLIAM FREDERICK,	Pennsylvania,	*The Vicissitudes of the Graduate.*
DAVIDSON, ABRAHAM,	Germany,	*Radix Valerianæ.*
LANDSCHUTZ, PETER,	Pennsylvania,	*Resina Jalapæ.*
CHRISTMAN, HARRY WARREN,	Pennsylvania,	*Prinos Verticillatus.*
GOESS, GEORGE CONRAD, JR.,	Pennsylvania,	*Elegant Pharmacy.*
TRUPP, LOUIS,	Pennsylvania,	*Fluid Extract of Prunus Virginiana.*
PHILLIPS, JACOB FRANKLIN,	Pennsylvania,	*Nitrous Oxide.*

NAME.	STATE.	SUBJECT OF THESIS.
DICKESON, WILLIAM EUNICE,	Pennsylvania,	*Lignin and Cellulose.*
SCHWARTZ, ARTHUR,	Russia,	*Water.*
SMITH, ALBERT HENRY,	Pennsylvania,	*The Indigenous Plants.*
STEVENSON, RICHARD GRAHAM,	New Jersey,	*Production of Coloring Matter from Coal and its Products.*
MOORE, FRANK,	Maryland,	*Althæa Officinalis.*
BYERLY, CHARLES HENRY,	Pennsylvania,	*The Action of Mild Chloride of Mercury on Comp. Tincture of Iodine.*
CLOUD, HARLAN,	Pennsylvania,	*Duty and Responsibility of a Pharmaceutist.*
TERRILL, GEORGE MORTON,	Virginia,	*Forms in which Medicines are Used.*

Examined in June, 1876.

HARRIS, PARK,	Pennsylvania,	*Opium.*
LINS, FRANK PIERCE,	Pennsylvania,	*Jaborandi.*

The following gentlemen had passed the examination entitling them to the Certificate of Proficiency in Chemistry and Materia Medica:

LEHMAN, JOHN WESLEY,	Pennsylvania,	*The Use of Glycerin in Fluid Extracts.*
WITSIL GEORGE EDWARD,	Pennsylvania,	*Honey and Glucose.*

The commencement exercises were held on the evening of March 16 at the Academy of Music, the first Vice-President, Charles Bullock, conferring the degrees, in the absence of the President. The senior professor presented the Procter prize to Olaf Martin Oleson, for having passed a very satisfactory examination in each branch, and the best general examination, as well as presented a meritorious thesis. Professor Remington then read the names of the first course students who had successfully passed the junior examination in February, and Professor Bridges delivered the valedictory address, after the close of which Mr. E. F. Boyer, of the graduating class, on behalf of himself and fellow-students, presented to him a valuable gold watch and a handsome album, containing the photographs of all the members of this class. Prof. Bridges, who had been completely taken by surprise, responded in a happy manner, referring to the growth of the college since the time when, nearly a half century ago, he became the assistant of the late Prof. Bache, then holding the chair of chemistry, and whom he followed in the year 1842.

The distribution of the usual quota of flowers, and other substantial presents, closed the exercises, which were interspersed with music by the Germania Orchestra.

Alumni Association of the Philadelphia College of Pharmacy.—The Thirteenth Annual Meeting was held on the afternoon of March 15, the President, George W. Kennedy occupied the chair; Mr. Wallace Procter, Secretary.

After the reading and approval of the minutes, the annual report of the President was read. It stated that in reviewing the past year they have every reason to be encouraged. The scientific meetings, during the winter months, for the benefit of the students, were well attended and had been interesting and profitable. During

the year a number of their associates were removed by death. The laboratory has been well patronized, all the tables having been occupied.

The Treasurer reported a balance of $71.77.

The Committee on Nomination of Officers presented the following report, and, on motion, the Secretary cast the vote of the Associotion for the names therein contained: President, R. V. Mattison; Vice-Presidents, S. M. McCollin, H. E. Wendel; Treasurer, E. C. Jones; Recording Secretary, Wallace Procter; Corresponding Secretary, W. W. Moorhead; Executive Committee, G. W. Kennedy and H. Trimble; Trustee of Sinking Fund, T. S. Wiegand.

The meeting then adjourned.

In the evening a public reception was given to the graduating class and their lady friends at College Hall. The Alumni address was delivered by Thomas S. Wiegand, Ph.G., and the following Alumni prizes were distributed:

A gold medal, for the highest average at the recent examination, to Olaf Martin Oleson, Iowa, and Certificates to Joseph Clarence Coxey, of Pennsylvania, for proficiency in Chemistry; Walter F. Childs, Pennsylvania, for Materia Medica; Norman A. Kuhn, Ohio, for Pharmacy, and to Richard Jesse Moore, Ohio, for proficiency in Pharmaceutical Manipulation.

A certificate for the highest average in the junior examination was awarded to David Patrick Miller, of Virginia.

The thirteenth annual report of this association will soon be published; copies of it will be mailed on application to the Recording Secretary.

New York College of Pharmacy.—The forty-seventh commencement was held at Chickering Hall, March 20, when the degree of Graduate in Pharmacy was conferred upon the following candidates:

Avery, Abbott L., New Jersey, *Salicin and Salicylic Acid.*
Benham, Edward N., New Jersey, *Sulphur, Sulphurets, and Sulphuric and Sulphurous Acids.*
Boeddiker, Otto, New York, *Picrotoxin.*
Boyken, J. Anton, New York, *Citric Acid.*
Bradley, Simeon C., New York, *Ergota.*
Breitenbach, Max J., Georgia, *Gossypium Herbaceum and Products.*
Broquet, Edward, Iowa, *Opium.*
Colby, Willis D., Ohio, *Modern Methods of Concealing the Taste and Odor of Medicines.*
Corwin, Fred. M, New York, *The Action of Certain Processes and Officinal Preparations on Calomel*
Doepfner, Eugene, New York, *Guarana.*
Duteil, Victor, Province of Quebec, *Nicotiana Tabacum.*
Egge, Karl J., New York, *Iodide of Potassium.*
Fries, Peter, New York, *Pharmaceutical Zoology.*
Frost, William A, New Brunswick, *Carbolic Acid.*
Garrison, Frank, New Jersey, *Arsenic and its Officinal Preparations.*
Getty, Wilmot S., North Carolina, *Phosphorus and Acidum Phosphoricum Dilutum.*
Goetze, Julius, New York, *Combustion and Flame.*
Hebig, William, New York, *Emplastrum Plumbi.*
Heidt, Thomas P., Georgia, *Classification of the Articles embraced in a Course of Lectures on Materia Medica.*

Henry, Ferris W., New York, *Iron and its Officinal Preparations.*
Herdling, Victor, New York, *The Gum Resins.*
Howe, Charles L., Vermont, *Weight, Measure and Specific Gravity.*
Hund, Otto H., New York, *Volatile Oils.*
Hunt, Effingham L., New Jersey, *Copper and Some of its Salts.*
Iler, Robert L., Louisiana, *The Reactions of Uric Acid.*
Kingston, Robert J., New York, *Opium.*
Klippert, Chas. F., New York, *The Origin of Caoutchouc and its Uses.*
Kopf, Henry, New York, *Boron, Boracic Acid and their Compounds.*
Lawler, Charles J., New York, *The Isolation of the Blue Coloring Constituent of Litmus.*
Leister, Ernest F., New York, *Saponification and Soap.*
Levy, Adolph, New York, *Copper and its Preparations.*
Montanus, Ernest, Jr., North Carolina, *Zinc and its Officinal Preparations.*
Neubauer, William G, New York, *Balsamum Tolutanum, History, Impurities, Tests.*
Nowill, F. Herbert, New York, *Cream of Tartar.*
Parker, John H., Connecticut, *Honey.*
Pauly, Christian N, New Jersey, *Careful Dispensing.*
Rieger, Hugo, New York, *The New Theory of Chemistry.*
Rose, J. Thurston, New Jersey, *Coffee.*
Routh, Jason P., Province of Quebec, *Berberina.*
Schmid, Henry, New York, *Arsenic.*
Schoelles, William, New York, *Sulphuric Acid, its Preparation, Properties and Uses, Tests, etc., etc.*
Schoenchen, George T., New York, *Ipecacuanha and its Preparations.*
Schoenefeld, Conrad, New York, *Nitrite of Amyl.*
Schrader, Hermann, Pennsylvania. *Phosphorus.*
Speck, Oscar O., New York, *Iodine.*
Stahl, Edward A., Jr., New Jersey, *Atropa Belladonna.*
Stegmair, Julius A., New York, *Salicylic Acid and the Salicylates.*
Teschner, Jacob, New York, *Iron and its Preparations.*
Van der Emde, Henry, New York, *Zinc and its Medicinal Preparations.*
Van Duzer, William A, New York, *What is the Most Precious and Valuable Metal?*
Wells, Francis B., Massachusetts, *The Preparation of Chemically Pure Urea.*
Winkelmann, John G., New York, *Sulphur.*
Zoeller, Edward V., North Carolina, *The Volumetric Method of Atropia.*

The gold, silver and bronze medals of the Alumni Association were awarded respectively to F. B. Wells, E. Montanus, Jr., and E. V. Zoeller. The graduating class presented to the College the photograph, in crayon, of Professor Bedford, who delivered the valedictory address on behalf of the faculty, M. Breitenbach responding for the graduating class.

Pharmaceutical Society of Great Britain.—At the Pharmaceutical meeting held February 7th, President John Williams in the chair, numerous donations to the library and museum were made; among the latter was a sample of *aconite root*, from Japan, which recently appeared in the London market and is now being investigated with the view of ascertaining whether it contains the same aconitia as Aconitum napellus, in which case it would form a valuable and salable article. It is very superior in appearance, soundness and freedom from admixture to that imported from Germany.

Mr. Postans remarked that *sublimed chrysophanic acid* had a very different appear-

ance to that prepared by crystallization from benzol. Professor Attfield said that during sublimation a portion of the acid was usually decomposed, the amount depending on the quantity operated upon and upon the length of time during which it had to be exposed to a high temperature. He did not think that there was any alteration in the sublimed portion.

Professor Bentley read a paper *on the admixture of white hellebore with valerian root*, and pointed out the principal differences which are readily observed. These are: 1. The leaves of the conical bud of veratrum or their fibrous remains form concentric sheaths arranged one within the other, while the leaves found at the end of the creeping shoots of valerian are opposite and overlap at the base; but such stolons are rarely if ever present in commercial valerian. 2. The white hellebore rhizomes are much larger, of a darker color and marked below with the pits and scars of old roots. 3. A transverse section of white hellebore rhizome presents a large central woody or spongy portion, of a whitish or pale-buff color, which is separated by a fine wavy-crenate ring from an outer broad white part, which is coated by a thin dark-brown or blackish bark-like portion. Commercial valerian shows a dark-brown firm and horny central portion, separated by a dark interrupted cambial zone from the brown cortical part. A vertical section of veratrum rhizome presents a fine dark wavy conically arranged line running nearly throughout its entire length. 4. The roots of veratrum arise from the upper part of the rhizome only, are larger, more shrivelled and of a paler color than those of the valerian rhizome. 5. The taste of veratrum rhizome and roots is at first sweet, then bitter, acrid and somewhat numbing. Valerian has no acridity, but is aromatic and somewhat bitter. 6. After admixture with valerian, veratrum acquires a feeble odor of the former; when cut or bruised, it excites sneezing. 7. Strong sulphuric acid, applied to a transverse or vertical section of the two rhizomes, produces with veratrum a deep orange-yellowish-red color, soon changing to dark blood-red, while the natural color of valerian is simply heightened.

From 42 ounces of the article the author picked out 8 ounces of white veratrum. The admixture was afterwards stated to have occurred at the docks by the breaking of two bales and the careless gathering of the scattered contents. But the author rather inclines to attribute it to carelessness in collection, and urges the necessity of an examination by a competent person, appointed for that purpose, of imported drugs, more especially when these are plants or parts of plants; also the necessity of carefully examining the drugs in our home stores and pharmacies.

In the discussion which followed the reading of the paper, it was stated that drugs which came from the continent, especially from Germany, contained a larger proportion of admixture than any others; also that at the present day American valerian root fetched a higher price than any other. The importance of microscopical examination was likewise dwelt upon.

Mr. H. Senier read a paper *on the coloring matter of the petals of Rosa Gallica*. Quercitrin and fat was first removed by ether, the coloring matter exhausted by alcohol, precipitated in a green, amorphous state by acetate of lead, and the precipitate decomposed either by sulphuretted hydrogen or an insufficiency of sulphuric acid. Well-defined microscopic crystals were obtained on combining the coloring matter with alkalies, the ammonio-potassium salt crystallizing in octahedra. Alkalies

change the color to a deep red with a bright green fluorescence, and when added in excess, to yellow; chlorine changes the color to yellow; sulphuretted hydrogen, to brown; stannic chloride, to a beautiful dark magenta; boiling with metallic mercury, to dark violet or purple. The hydrates of barium and of calcium yield yellowish-green precipitates, changing to brown on drying. The lead precipitate has a composition corresponding to the formula $Pb_2C_{21}H_{29}O_{30}$.

Mr. W. A. Shenstone read a paper on *the action of dilute nitric acid on brucia*, referring to the observations of Sonnenschein ("Amer. Jour. Phar.," 1875, p. 345) and Cownley (*ibid.*, 1876, p. 354), and confirming the results of the latter, that thereby brucia is not converted into strychnia; on the contrary, the latter is destroyed by the action of the nitric acid, the more rapidly the stronger the acid has been. The finding of strychnia is attributed to the presence in commercial brucia of some strychnia, the author separating from one sample rather more than 1 per cent. For the complete separation the author recommends a process which depends upon the fact that strychnia precipitates brucia from its salts; the solution of the brucia salt is partially precipitated by an alkali; after standing aside for a few hours the precipitate is collected, washed, redissolved in dilute acid, and the partial precipitation repeated two or three times; the alkaloid in the mother-liquor may be recovered.

Mr. B. H. Paul read a paper *on the "Pharmacopœia" test of quinia sulphate*, which requires the absence of any separation of alkaloid crystals on the addition of ammonia to 10 grains of quinia sulphate and half a fluidounce of ether. The author found the presence of 30 per cent of cinchonidia sulphate could not be detected in this way, and recommends Kerner's test for this purpose ("Amer. Jour. Phar.," 1862, p. 426; 1875, p. 537). The German "Pharmacopœia," in which the test has been adopted, recommends to macerate two grams of the salt in 20 cc. of distilled water, at 15° C., filtering after half an hour, introducing 5 cc. of the filtrate into a test-tube, pouring cautiously upon the liquid 7 cc. of officinal ammonia water (sp. gr. ·960), and then mixing gently, when immediately, or after a short time, a clear liquid should be formed. The author recommends a modification of these directions by boiling 30 grains of the salt with 1½ fluidounces of water, allowing to cool, filtering, etc.

Pharmaceutical Society of Paris.—At the meeting held Nov. 8th, a note by Mr. Bretet was read, concerning *the adulteration of wines with sulphate of iron.* From his observations the author concludes, 1st, that the addition of sulphate of iron to wine deprives that liquid of a portion of its tannin, tannate of iron being precipitated while the sulphuric acid remains in the wine, either free or as an acid salt; 2d, the nature of the wine is thereby completely altered; 3d, to prove the fraud, it is not sufficient to test the suspected wine with ferrocyanide of potassium, but it should be compared with a wine of undoubted origin, and, if possible, some of the deposit in the cask should be procured, in which a large proportion of iron will be found.

The presentation by Mr. Latour of a deposit from the staves of a cask in which wine colored with fuchsin had been kept, led to some discussion, and to the appointment of a committee to report on the artificial coloration of wine with fuchsin.

Mr. Yvon exhibited a portable *uroscope*, consisting of a metallic tube containing the necessary test-tubes, litmus paper, globules of caustic potassa and a little microscope, to determine the reaction of the urine, the presence of albumen (by heat) and sugar (by potassa), and to examine with the lens any urinary sediment, etc.

At the meeting held Dec. 8th, the bequest of the late Mr. Gobley, amounting to 3,000 francs, was paid in. Mr. Méhu was elected Vice-President, and Mr. Petit, Secretary, for the ensuing year. Mr. Poggiale communicated a paper recently published by Prof. Kolbe, of Leipzig, in which he takes strong ground against the tendency of chemistry as at present taught in Germany, which he characterizes as neglecting the profound study of phenomena by exact experimental researches, and substituting in place thereof vague philosophical speculations and unproductive theorems, and predicts that, unless the course be changed, some years hence it would again become necessary for German students in chemistry to repair to Paris, because natural philosophy rather than chemistry would then be taught in Germany. On the contrary, in France, many young chemists have in recent years been educated, who, with the older ones—with few exceptions—remain true to the exact sciences, and produce numerous memoirs based upon inter sting researches.

At the meeting of Jan. 8th, Mr. Planchon exhibited a Chinese bark called *hoang nau*, which is said to be used in hydrophobia and leprosy; its physical resemblance to false angustura bark (Strychnos nux vomica), and its bitter taste suggests that it may probably be derived from a strychnaceous plant.

Mr. Benoit, in a note *on the testing of chlorate of potassium*, proposes the use of a ferrous salt for this purpose, which in the presence of strong hydrochloric acid will be converted into a ferric compound.

Mr. Limousin read a note *on Croton oil pencils*, which he prepares by melting one part each of white wax and cacao butter, by means of a water-bath, in a glass flask, adding two parts of croton oil, and corking the flask until the mixture begins to congeal, when it is poured into suitable cylindrical moulds, 8 to 9 millimeters in diameter. The pencils are covered with tinfoil and kept in closed vessels. It is claimed for the pencils that the action of the oil can be better localized, and that its revulsive action is even more energetic than when applied in its natural state.

EDITORIAL DEPARTMENT.

The Journal.—Through the kindness of our friends for some months past, an amount of original matter had been contributed for publication in the JOURNAL, that much of the selected matter had to be laid aside. For the present issue it was determined to use at least a portion of the material which has been accumulating on our table, and to accomplish this, it became necessary to increase this number to 64 pages. Amongst the original matter contributed to this issue will be found accounts of plants and their constituents which are successfully used in medicine, or promise to become valuable medicinal agents, or have been employed more extensively heretofore. Several papers on pharmacopœial preparations and on general

topics will be read with profit and interest, and the gleanings and selections from foreign and domestic journals cover a wide range of observation and research.

Fluid Weights in Prescriptions.—Mr. Alfred B. Taylor, has written, under this title, a very valuable paper, which is published in the "Medical and Surgical Reporter," Feb. 24. A point which has been often overlooked, is discussed by noting "that whether the ultimate system of conversion comprise the substitution of weights for volumes, or of one order of weights for another order, no necessity exists (excepting for purposes of rigid comparison) for preserving exact translations or precise equivalents of proportion. It is quite sufficient that good approximations to established values be attained. Physiologically and therapeutically there can be no very accurate determination of the mathematical value of an average effective dose of any agent; and no reason can be assigned for regarding one grain of opium (for example) as a medium sedative dose, rather than $\frac{11}{12}$ of a grain, except its convenience, by our existing notation. This consideration is calculated to prevent a large amount of superfluous labor and anxiety likely to be bestowed by some on very minute determinations of metrical equivalents."

It may be most convenient for physicians who are accustomed to prescribe by measure to follow the suggestion of Mr. Taylor, by prescribing all medicinally active preparations by weight, and ordering the addition of an adjuvant to a determinate fluid volume. In former papers we have shown that in most countries it is the universal custom to prescribe and dispense by weight *only*, and we do not believe that there the patients had just cause for complaint about inaccuracies. In reality, the trouble of fixing the dose of mixtures is by no means as great as is often imagined, as we endeavored to show before; still as a compromise for those who cannot altogether abandon old habits, the plan is a good one, but we should like to see it coupled with the efforts of educating the medical student and young practitioner into the habit of abandoning measures altogether in his prescriptions, as was formerly also the practice in Great Britain.

The suggestion of Mr. Taylor to abandon in medicine the term cubic centimeter for flui-gram would prove of considerable convenience if measures were perpetuated in prescribing and dispensing, which, we think, will not be the case. Regarding the approximate measurement of doses, Mr. Taylor suggests the following:

> In order, however, to remedy the very irregularity which now exists from the uncertain capacity of the common teaspoon, it would be very desirable that a medicinal spoon of uniform and standard capacity should be authoritatively and generally adopted. Were the "Metric" weights established, spoons accurately made to hold exactly four flui-grams might very properly be called "metri-spoons," and would prove a great convenience both to the physician and to his patient. They should be manufactured both in glass and metal; and for facility of movement without spilling, as well as for greater accuracy in filling, the bowls of such medicinal spoons should be deeper and more spheroidal than those in common use.
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> For larger doses than the teaspoonful but a single additional measure would be required to complete the domestic equipment, a substitute for the very uncertain two-ounce "wine-glass." A glass vessel somewhat of the form of the apothecaries' two-ounce graduate, accurately marked to show the capacity of 17.314 fluid drachms, might be called a "metri-glass." Its capacity would be in excess of the double fluid ounce by f ℥i⅓; and if graduated to eighths, its lowest division would represent the double "metri-spoon." This useful vessel, would, therefore, comprise the equivalents of the double teaspoon or dessert-spoon, the tablespoon, the double tablespoon, and the wine-glass.
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> These two terms, "metri-spoon," and "metri-glass," would, from the nature of the case, soon come to signify the abstract measure, as well as the concrete implement; rendering the use of the suffix "ful"

superfluous. The direction, "a metri-spoon three times a day," would thus naturally supersede the expression, "a metri-spoonful." Were the gram and centigram authoritively adopted, the employment of these weights (after having been translated by suitable tables) would be found to be much less troublesome than might be supposed. With a little practice, the use would, of course, soon become as convenient as that of our own weights at present.

The tenor of Mr. Taylor's paper is well shown in his concluding remarks, where he says:

To recapitulate—the purpose attempted in this paper has been to point out, first, that fluid medicines may be as easily prescribed and dispensed by weights as by volumes, after a proper tabulation of effective and maximum doses of the entire materia medica in units of weight; secondly, that mixtures so prepared may be administered with perfect facility by familiar measures of volume; thirdly, that in the event of the officinal adoption of the "metric" gram, its notation can be made exceedingly simple and convenient; fourthly, that in this case, while no serious disadvantage would result from the retention of the familiar fluid drachm, or teaspoonful, yet, for the sake of greater precision and neatness, the "flui-gram" (the French millilitre) should be the popular unit of volume for the actual administration of fluid medicines; and lastly, that, for the sake of certainty and uniformity, the "teaspoon should be replaced by a standard medicinal spoon, holding just four "flui-grams," and the ordinary, but variable, "wine-glass" should, in like manner, be superseded by a "metri-glass" having the capacity of sixteen such standard medicinal spoons.

These suggested reforms would none of them be found to be very difficult of introduction, and they would result in the advantage to the profession of a great permanent convenience, facility and trustworthiness in the employment and exhibition of therapeutic agents.

Responsibility of Pharmacists in Cases of Criminal Poisoning.—A case was tried in the Court of Oyer and Terminer, in this city, on March 19th, which is of considerable interest and general importance. It appears that on November 13th, Wm. H. Driscall purchased four ounces of tincture of opium at a well-known drug store, and on arriving home, in the presence of his mother and sister, swallowed about three ounces of it in two draughts; he vomited some, and although medical aid was soon after obtained, he died in about seven hours. The assistant who sold the laudanum was tried under the charge of manslaughter.

It was testified by two relatives and two neighbors that the deceased was drunk before the purchase; he had been seen in the street somewhat staggering and had been dozy at home. On the other hand a witness for the prosecution testified that at the store he had the appearance of a sober and respectable man, and conversed rationally about the election and the weather. It was also proven that when asked why he wanted so large a quantity, he said it was for family use, and he did not want to be running out after it every day; that the deceased had been a customer at the store before, and that the clerk, because it was said to be for family use, and to guard against mistakes by the family, had put a prominent poison label upon the bottle in addition to the regular label, which, besides the name of the article was marked "poison" and had full directions for use.

The case was submitted without argument upon the charge of the Court. Judge Peirce charged the jury that it was averred on the part of the Commonwealth and conceded by the defence that if the defendant knew that deceased was drunk or intoxicated when he sold him the drug, defendant would be liable, under this indictment, to conviction. He agreed therewith, and it was for the jury to determine whether the defendant had such a knowledge; but if they were satisfied defendant only sold the drug to deceased after a conversation with him and a careful inquiry

as to the use to be made of the drug, and his sobriety, and that defendant was satisfied that he was sober, and it was right and proper that he should have the drug, then defendant had committed no offence, and the verdict should be not guilty.

After a few minutes' deliberation, the jury returned a verdict of "not guilty."

Substitutions.—The formula for an effervescent laxative draught, furnished by Mr. Jos. Rhinehart, for the March number, is there stated to yield a cheaper, equally efficient, quite pleasant and more expediously made preparation than citrate of magnesium, and as such, deserves the attention of physicians and pharmacists, to be prescribed by the former for poor patients, or furnished by the latter when a pleasant dose of "epsom salt" is desired, particularly since it may be prepared in a minute or two. No one, however, should find in it a recommendation to put up such an article, label it "citrate of magnesium," and sell it as such; such a course would be outright fraud.

We are prompted to these remarks by having received two communications, recommending to prepare *citrate* of magnesium, by lessening the officinal quantity of citric acid and making up the deficiency in activity by the addition of more or less magnesium *sulphate*. We have reason to believe that such a reprehensible practice exists to some extent; in extenuation, it may, perhaps, be said, that such private formulas date back to the time before the present "Pharmacopœia" was published, when the then officinal formula did not yield a permanent preparation. But since we have an officinal formula yielding a preparation which leaves little or nothing to desire, there can be but one of two motives found for persisting in such a course, either the desire for greater gain, or the wish to undersell a conscientious neighbor.

If such a preparation was sold, not under the officinal name, but designated so as to indicate its composition, no fault could be found. But the worst feature of the practice is that it is "home adulteration," and if allowable in apparently unimportant matters, where is its limit? The pharmacist guilty of it creates at least a suspicion as to his honesty in other important matters.

The Pharmaceutical Examining Board has made the following report for the year 1876:

To the Hon. William S. Stokley, Mayor of Philadelphia:

The "Pharmaceutical Examining Board" respectfully report that during the year 1876 they received applications from forty clerks for examination and registration as "qualified assistants." Of this number twenty-three were rejected as not posessing the requisite knowledge and qualifications to take charge of a retail drug store during the temporary absence of the proprietor. Seventeen were deemed safe for the position, and were registered accordingly, and received their certificates, making them legally "qualified assistants."

Eleven applications for examination were made by persons wishing to open stores as proprietors thereof four of whom did not appear when notified to do so. Of the seven examined, four were found so deficient in the knowledge of chemistry, materia medica, pharmacy, and doses of active remedies that the Board was unwilling to assume the responsibility of granting them certificates. Three persons passed the examination satisfactorily and were registered as "Proprietors."

During the year ten graduates of Pharmacy entering into business were registered according to law without examination by the Board. The total number on the register on December 31st, 1876, was five hundred and ninety (590) proprietors, and three hundred and twenty-five (325) qualified assistants.

It is believed that many retail drug stores have been opened in the city by persons who evade the law requiring them to be registered, the one where a fatal mistake[1] occurred recently being a melancholy

[1] This case was reported in our last number, page 141.—Editor Am. Jour. Phar.

instance. The Examining Board is powerless to prevent such violation, but if your Honor will allow your patrolmen to return the names of the owners of all stores opened upon their beats, with their locations, you will render important assistance in carrying out the law, which was passed for the protection of the lives of the citizens, and in accordance with which we hold our appointments by you.

It appears from this that nearly sixty per cent. of the applications from both clerks and intended proprietors had to be rejected as unqualified. The Mayor has acted in accordance with the suggestion of the Examining Board, and a number of stores were found, the proprietors of which had omitted to become registered. From the above figures the number of apothecary stores in the city of Philadelphia cannot fall much short of 550, which, for a population of 850,000, averages 1 for every 1,600 inhabitants.

Prices of Pills.—In Mr. Moore's paper on pills, in our last number (page 123), a few quotations from the price list of a manufacturer of compressed pills have been given. One of the manufacturing houses of this kind of pills has sent us a printed price list, showing that their list prices are considerably below those referred to above. They quote compound cathartic pills, 40 cts.; 1 gr. quinia sulphate, $1.25; Lady Webster's, 40 cts., and compound rhubarb pills at 70 cents per hundred.

Pharmacy Law of New Jersey.—The Legislature of New Jersey, at its recent session, passed "an act to regulate the practice of pharmacy," which is now awaiting the signature of the Governor. It provides that the New Jersey Pharmaceutical Association shall every three years submit to the Governor the names of 15 pharmacists doing business in the State, out of which number he is to appoint five as the Board of Pharmacy of the State of New Jersey. Every pharmacist now engaged in business in the State is entitled to registration on payment of two dollars; all others, except graduates from pharmaceutical and medical institutions, will have to pass an examination before the Board, and will then be entitled to registration on payment of five dollars. The exception alluded to is so ambiguously worded, that the graduates referred to do not appear to come under any of the provisions of the act.

It is curious to note the fact that eight or nine years ago a pharmacy law was prepared by a physician, then a member of the Legislature of New Jersey, which contained the provision that no graduate in medicine should be permitted to enter into the pharmaceutical business until after he should have been actively engaged behind the prescription counter *for at least one year*. He was evidently aware of what many physicians are too shortsighted to acknowledge, that there is a vast difference between the knowledge of the therapeutical application of drugs and a thorough pharmaceutical training or education. What a difference between that proposition and the provision in this law! The law is good in that it creates the title of "registered pharmacist," the unlawful use of which is liable to a penalty of $50. It has several weak points, and the machinery necessary to carry it out appears to be rather awkward, but may perhaps work more smoothly in practice. On the whole, however, we congratulate our brethren in New Jersey at their success after the years of labor, which really deserved to be rewarded with one of the best laws yet enacted.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Qualitative Chemical Analysis. A guide in the practical study of chemistry and in the work of analysis. By Silas H. Douglas, Professor of Chemical Technology and Metallurgy, and Albert B. Prescott, Professor of Organic Chemistry and Pharmacy in the University of Michigan. Second edition, revised. New York: D. Van Nostrand, 1876. 8vo, pp. 254.

Although the work is intended for the more advanced student, who has already studied chemistry theoretically, the preliminary chapters contain brief explanations concerning chemical notation and the various operations performed in analytical work. This is followed by the analytical reactions of the metals, divided as usual into groups, and of the inorganic and of the commoner organic acids. The reactions given are not merely those which are necessary for the performance of ordinary qualitative analysis, but it has been the authors' aim to give as complete a picture of the behavior of the various substances as the present state of science will permit, for the purpose of making it available for recognition and separation under the most varied circumstances. The tables of comparison, which are introduced to take a bird's-eye view of the resemblance and differences of the behavior of allied metals and acids, will be found very convenient and instructive. The book closes with chapters on analysis in the dry way, on the systematic analysis of solutions and the solubilities of salts, and with an enumeration of the reagents used in analysis.

The authors say that the chief object in this work has been "to aid the student in gaining an accurate acquaintance with the facts whereby analyses are made, and a clear understanding of the co-ordination of these facts—the principles of analysis."

In our opinion, the work is well calculated for this purpose, and it cannot fail, when properly used, "to prevent habits of automatic operation and of superficial knowledge in analysis." We recommend it to pharmacists and others as a work of reference in the performance of analytical work.

The United States Pharmacopœia and the American Medical Association. 8vo, pp. 11.

This pamphlet, by Prof. H. C. Wood of the University of Pennsylvania, opposes the position in regard to the national "Pharmacopœia," as taken by Dr. Squibb in the pamphlet noticed on page 143 of our last number, and, like the latter, merits the careful attention of all the medical and pharmaceutical bodies of the United States.

The People vs. Schrumpf. Misdemeanor: Adulteration of Milk. Argument of W. P. Prentice, counsel to the Board of Health for the prosecution. New York: 1877. 8vo, pp. 32.

A few months ago this case attracted considerable attention, and was freely discussed by the daily papers. The pamphlet before us is an able review of the testimony on both sides, and more particularly of that portion which relates to the detection of watered milk by means of the lactometer, which Prof. Doremus had asserted was unreliable. The accused was found guilty.

Report on the Salt Manufacture of Michigan. Prepared to accompany volume III of the State Geological Survey. By S. S. Garrigues, Ph.D., State Salt Inspector. New York: Julius Bien, 1876 pp. 52.

An interesting report on the manufacture of salt, entering into details concerning apparatus, process, inspection and yield, and giving also historical notes and statistical information.

Considerations in Relation to Diseases of the Joints. By David Prince, M.D. pp. 33. Reprinted from the "American Practitioner," February, 1877.